Charlottesville Area Transit
TRANSIT DEVELOPMENT PLAN:
FISCAL YEARS 2012-2017

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(Proposed Final)

Prepared by:

CTG Connetics Transportation Group

Under Sub-Contract to:

ATKINS

Under Contract to:

DRPT
Virginia Department of Rail and Public Transportation

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CAT TDP PROCESS

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), has completed this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The near-term and short-range plans that are presented in this TDP are designed to improve service efficiency and delivery, apply resources where they are most needed, and modernize the route network based upon current and projected conditions within the service area. Both of these plans have been used to identify and program state-level funding needs during the 2012-2017 timeframe. The long-range plan element (2035) of this TDP identifies service improvement recommendations that connect the TDP's six-year service plans with the Thomas Jefferson Planning District Commission's (TJPDC) Long-Range Regional Transportation Plan (LRTP) process. With all three plans, this TDP provides direction in terms of service expansion, equipment requirements, and facility needs.

Preparation of the CAT TDP included intensive field investigation and team evaluation. Key tasks included:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

A series of Technical Memorandums have been completed to document each task in the CAT TDP process. Those Technical Memorandums are:

- ✔ Tech Memo #1: Documentation of CAT Staff Input
- ✔ Tech Memo #2: Documentation of Stakeholder Input and Public Outreach
- ✔ Tech Memo #3: Ridecheck Survey Methodology and Results
- ✔ Tech Memo #4: On-Board Survey Methodology and Results
- ✔ Tech Memo #5: Evaluation of Existing Service and Route Profiles
- ✔ Tech Memo #6: Peer Agency Review
- ✔ Tech Memo #7: Latent Demand Analysis
- ✔ Tech Memo #8: Service Plan Recommendations

✔ Tech Memo #9: TDP Financial Requirements

Chapters in this TDP address DRPT's TDP requirements and are as follows:

- Chapter 1 presents an overview of existing transit services provided in Charlottesville
- Chapter 2 presents transit-related goals and objectives from Charlottesville's and Albemarle County's Comprehensive Plan
- Chapter 3 provides an extensive description and evaluation of CAT services, with much of the information pulled from the above-referenced Technical Memorandums
- Chapter 4 presents service needs that have been identified in this TDP process
- Chapter 5 provides a detailed description of proposed service improvements, operating requirements and operating costs for the TDP six-year time period
- Chapter 6 identifies facility and equipment needs during the TDP six-year time period
- Chapter 7 presents a financial plan
- Chapter 8 on-going service evaluation and monitoring needs

1.0 OVERVIEW OF CHARLOTTESVILLE, VIRGINIA TRANSIT SERVICES

The City of Charlottesville is located within Albemarle County, Virginia. The City's population has grown from 40,099 in 2000 to 43,475 in 2010 – a 7.8 percent increase. The Charlottesville Metropolitan Statistics Area (MSA) population has grown from 174,021 to 201,599 – a 13.7 percent increase.

The University of Virginia is the major employer in Charlottesville. There are over 21,000 undergraduate and graduate students enrolled at UVA, with over 12,000 faculty and staff. Other major employment centers include downtown Charlottesville, the US 29 North commercial area (including Fashion Square Mall, Seminole Square, Albemarle Square, Barracks Road Shopping Center, Rio Hill Shopping Center and Walmart), and the US 250 East/Pantops area (including State Farm Insurance and the soon to open Martha Jefferson Hospital campus). Major roadways in the Charlottesville area include I-64, US 250 (Long Street and Richmond Road), and US 29 (Emmet Street North/ Seminole Trail).

1.1 Transit Background/History

The Charlottesville Area Transit (CAT) bus system is owned and operated by the City of Charlottesville, and is partially funded by University of Virginia (UVA) and Albemarle County through long-standing partnerships. CAT provides fixed route transit service within the city, to certain areas of Albemarle County and to UVA's campus. CAT buses operate seven days a week. CAT began service in 1975 as Charlottesville Transit Service after the city purchased Yellow Transit Company which provided municipal bus service before then. The service was previously known as Charlottesville Transit Service (CTS) until 2010, when the City renamed the service Charlottesville Area Transit (CAT).

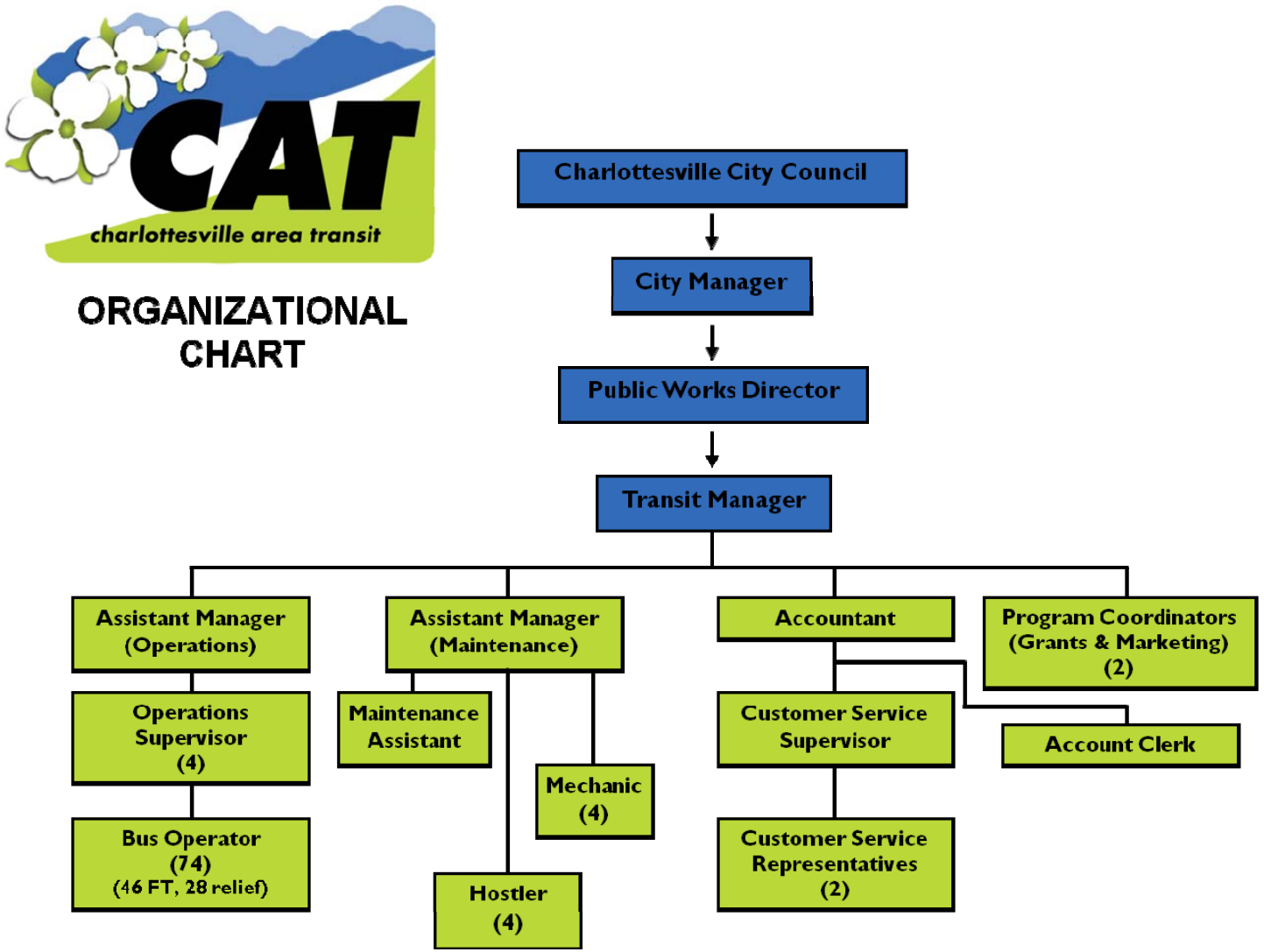
1.2 Organizational and Governance Structure

CAT is owned and operated by the City of Charlottesville and housed under the city's Public Works Department. Figure 1-1 presents an organizational chart for CAT service. Decisions regarding CAT service are ultimately made by the City Council. The day-to-day operations are administered through the Transit Manager.

The Charlottesville City Council consists of five members who are elected on an at-large, non-partisan basis for four-year terms with staggered terms: three are elected in one year and two are elected two years afterward. The City Council elects the Mayor and Vice Mayor as well as appoints the City Manager. The Mayor presides over City Council meetings, casts the deciding vote in the event of a tie, and represents the City in a ceremonial capacity. The Vice Mayor presides when the Mayor is unavailable. City Council meetings are held on the first and third Mondays of each month in City Hall council chambers.

There is no specific board or commission that directly addresses transit issues. However, some transit-related issues may be brought forth to the City's Planning Commission.

Figure 1-1
CAT Organizational Structure



1.3 Description of CAT Routes

CAT operates seventeen routes. All routes operate Monday through Saturday between approximately 6:30 a.m. to approximately 6:30 p.m. Seven of these routes operate until approximately 11:30 p.m. and four of those routes are dedicated night service routes. Two routes operate on Sundays. Figure 1-2 illustrates CAT's Monday through Saturday alignments. Figure 1-3 illustrates CAT's Monday through Saturday night service routes. Figure 1-4 shows CAT service on Sundays.

Tables 1-1 through 1-3 list CAT's characteristics of Monday through Friday, Saturday and Sunday service. Service characteristics for weekday and Saturday are very similar, however on Saturday Routes 3, 4, 6, and 8 operate at less frequent service levels in the peak periods, and slightly different operating hours.

UVA FREE Trolley

The UVA FREE Trolley operates between downtown Charlottesville and the UVA campus. This route operates at frequent (15-minute) service and is fare-free for all riders. This route is also partially funded by the University of Virginia. The UVA FREE Trolley is one of two routes that operate on Sunday and one of seven routes that have late operating hours. Frequencies on that day are 30 minutes in the morning and 45 minutes the rest of the day.

Route 1A East Market

This route operates from downtown Charlottesville to the Woolen Mills area via East Market Street. This route operates at 60-minute frequencies and is interlined with Route 1B.

Route 1B PVCC

This route operates from downtown to the Piedmont Virginia Community College, located south of I-64 along Scottsville Road. This route operates at 60-minute frequencies and is interlined with Route 1A. Route 23 provides night service along this route.

Route 2A Locust Avenue

Route 2A operates in a "figure eight" alignment around downtown and the Locust Avenue neighborhood immediately to the north via Park Street and Locust Avenue, servicing Martha Jefferson Hospital on the return path. Frequencies are 60-minutes and it is interlined with Route 2B.

Route 2B Southwood

Route 2B operates between downtown and the Albemarle County Office Building southwest of the city via Ridge and 5th Streets. This route operates at 60-minute frequencies and is interlined with Route 2A. Albemarle County contributes to the funding of this route.

Route 3 Belmont

Route 3 serves downtown Charlottesville and the Belmont and Belmont Park neighborhoods south of downtown via Monticello, Hinton and Altavista Avenues. Monday through Friday frequencies are every 30 minutes during peak periods and 60-minutes during the midday period. Frequencies are hourly on Saturdays. This route is interlined with Route 6.

Route 4 UVA Hospital, Fry's Spring, Downtown

This route serves downtown Charlottesville, UVA's Hospital on Lee Street, and the Fry's Spring neighborhood via Elliot and Cherry Avenues with deviations into the Forrest Hills Park/Prospect Avenue

and Johnson Village neighborhoods. Route 4 operates at 30-minute frequencies during peak periods and 60-minute frequencies otherwise. Route 22 provides night service to portions of this route.

Route 5 Barracks Road to Walmart

Route 5 is the only route that does not interact with the Downtown Transit Station. This route operates at 30-minute frequencies between Barracks Road Shopping Center and Walmart and Sam's Club to the north. The Greenbrier Drive and Four Seasons areas, Fashion Square Mall, and the Rio Hill and Albemarle Square Shopping Centers are all served by Route 5. Route 5 is fully funded by Albemarle County and is one of seven routes that have late operating hours

Route 6 Ridge, UVA & Downtown

Route 6 operates between downtown Charlottesville and the Ridge Street/Jordan Hills Park area. Frequencies are every 30 minutes during peak periods and every 60 minutes otherwise. This route is interlined with Route 3. Route 22 provides night service to the majority of this route.

Route 7 Downtown to Fashion Square

Route 7 operates between the Downtown Transit Station and Fashion Square Mall via West Main Street and US 29 (Emmet Street North/Seminole Trail). UVA, Barracks Road Shopping Center and Seminole Square Shopping Center are all served by Route 7. This route operates at frequent (15-minute) service until the evening period when frequency is reduced to 30 minutes, Monday through Saturday. Frequencies on Sunday are also at every 30 minutes. Route 7 is one of seven routes that have late operating hours.

Route 8 Seminole & Downtown

This route operates between downtown, and Barracks Road and Seminole Square Shopping Centers via Preston Avenue, Barracks Road and US 29 (Emmet Street North/Seminole Trail). Frequencies are every 30 minutes during peak periods and 60 minutes otherwise.

Route 9 Charlottesville High School

Route 9 serves downtown and Charlottesville High School via the 10th & Page and Barracks-Rugby neighborhoods. Service is offered at hourly frequencies Monday through Saturday.

Route 10 Pantops

This route operates between downtown and the Richmond Road corridor area via High Street. The Pantops Shopping Center is served by this route as is Martha Jefferson Hospital. Frequencies are hourly Monday through Friday and Route 24 provides night service to a portion of this route. Albemarle County fully funds this route.

Route 21 (Night Service) Belmont

Route 21, as a dedicated night route, is one of the seven routes that have later operating hours. This route follows Route 3's alignment and has 30-minute frequencies. This route is interlined with Route 22.

Route 22 (Night Service) Prospect Avenue, UVA Hospital

This route provides dedicated night service to a portion of Routes 4 and 6 between downtown, UVA Hospital and the neighborhoods southeast of downtown. Service frequencies are 30-minutes. This route is interlined with Route 21.

Route 23 (Night Service) PVCC

This route provides dedicated night service between downtown and PVCC and follows the same alignment as Route 1B. Frequencies are every hour. This route is interlined with Route 24.

Route 24 (Night Service) Pantops

Route 24 is the dedicated night route providing hourly service between the Downtown Transit Station and the Wilton Farm area east of downtown. Pantops Shopping Center is also served on this route. This route is interlined with Route 23. This route is also funded by Albemarle County.

Figure 1-2
CAT Bus Route Alignments, Monday through Saturday Service

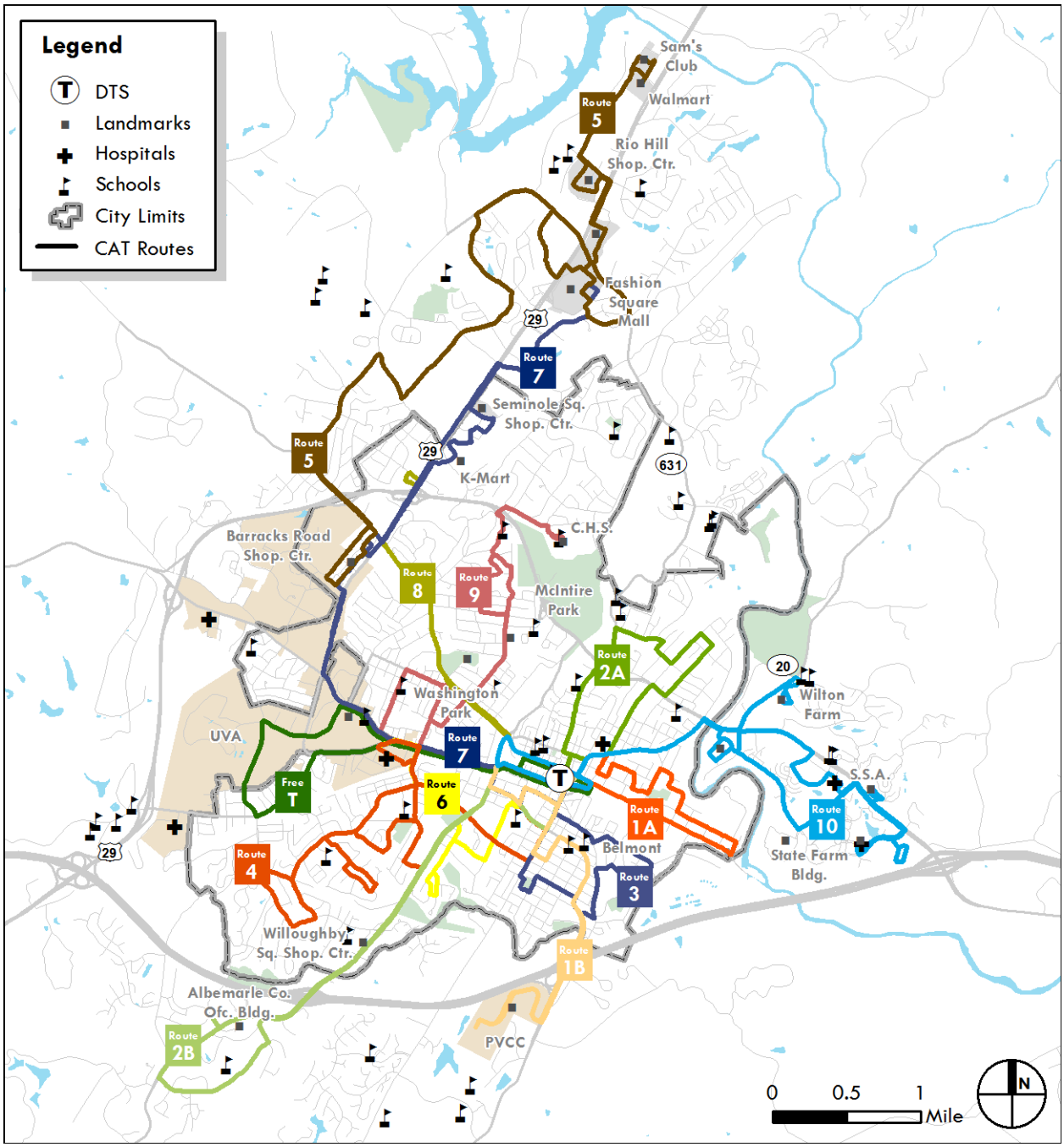


Figure 1-3
CAT Bus Route Alignments, Monday through Saturday Night Service

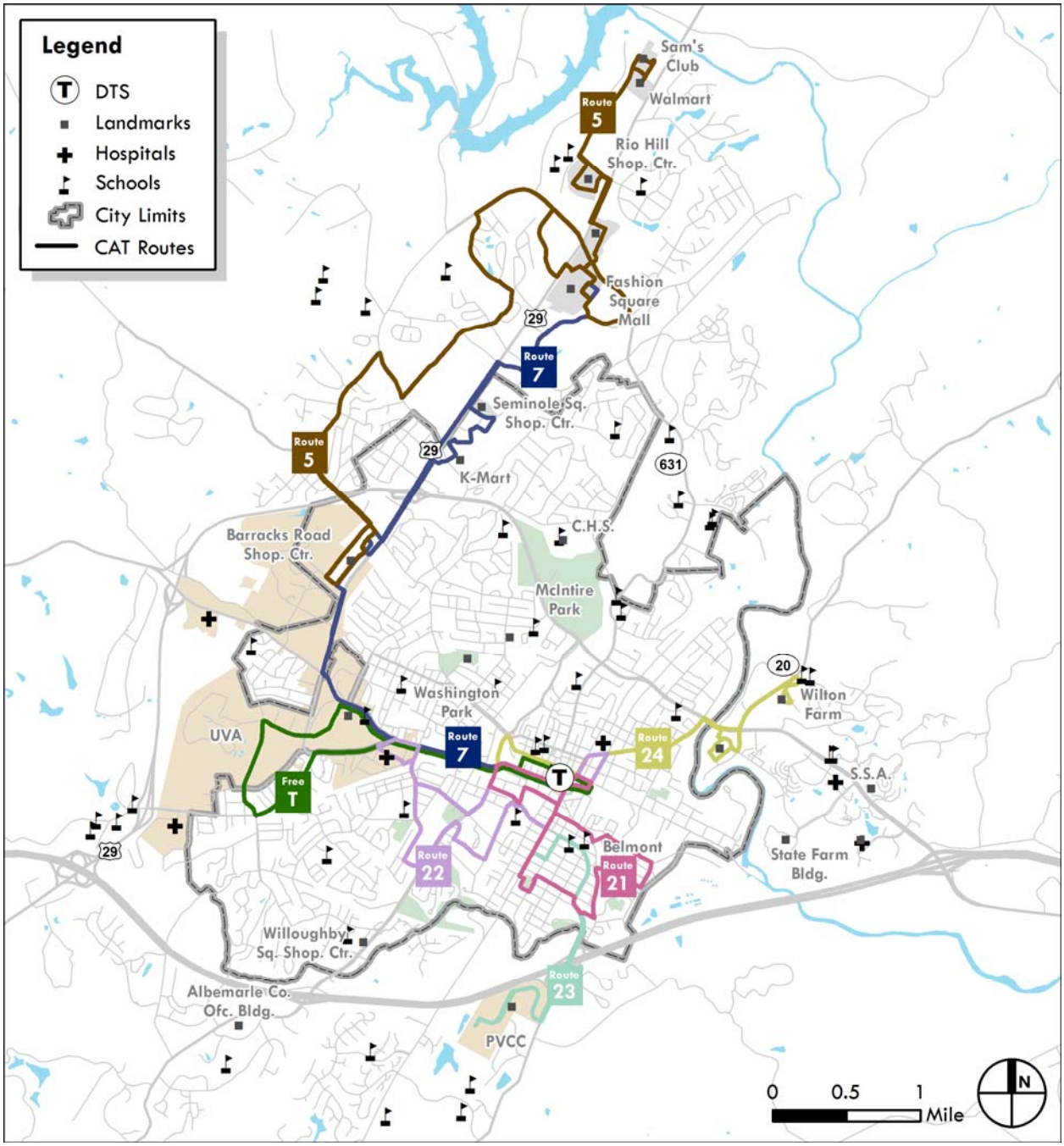


Figure 1-4
CAT Bus Route Alignments, Sunday Service

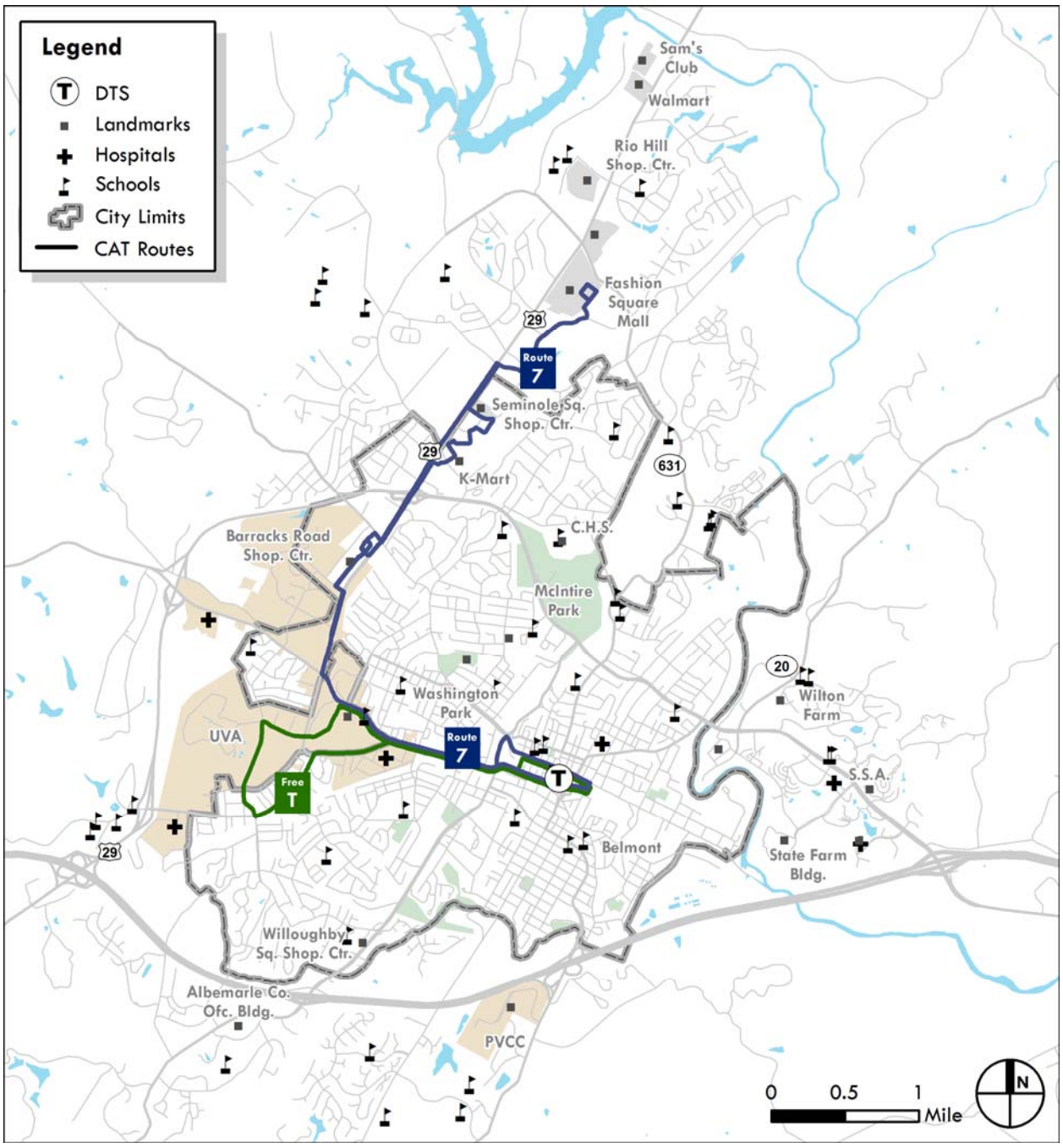


Table 1-1
CAT Weekday Fixed-Route Service Characteristics

Route	Span of Service	Frequencies [min]			
		AM Peak	Midday	PM Peak	Evening
UVA FREE Trolley	6:40 a.m. - 11:48 p.m.	15	15	15	15
1A - East Market	6:20 a.m. - 6:42 p.m.	60	60	60	-
1B - PVCC	6:45 a.m. - 6:12 p.m.	60	60	60	-
2A - Locust Ave	6:20 a.m. - 6:42 p.m.	60	60	60	-
2B - Southwood	6:45 a.m. - 6:15 p.m.	60	60	60	-
3 - Belmont	6:20 a.m. - 6:42 p.m.	30	60	30	-
4 - UVA Hospital, Fry's Spring, Downtown	6:45 a.m. - 6:37 p.m.	30	60	30	-
5 - Barracks Road to Walmart	6:15 a.m. - 10:55 p.m.	30	30	30	30
6 - Ridge, UVA & Downtown	6:45 a.m. - 6:45 p.m.	30	60	30	-
7 - Downtown to Fashion Square	6:30 a.m. - 11:42 p.m.	15	15	15	30
8 - Seminole & Downtown	6:30 a.m. - 6:55 p.m.	30	60	30	-
9 - Charlottesville High School	6:45 a.m. - 6:40 p.m.	60	60	60	-
10 - Pantops	6:15 a.m. - 7:12 p.m.	60	60	60	-
21 - (Night) Belmont	6:45 p.m. - 11:30 p.m.	-	-	-	30
22 - (Night) Prospect Ave, UVA Hosp.	6:45 p.m. - 11:30 p.m.	-	-	-	30
23 - (Night) PVCC	6:45 p.m. - 11:12 p.m.	-	-	-	60
24 - (Night) Pantops	7:15 p.m. - 11:35 p.m.	-	-	-	60

Table 1-2
CAT Saturday Fixed-Route Service Characteristics

Route	Span of Service	Frequencies [min]			
		AM Peak	Midday	PM Peak	Evening
UVA FREE Trolley	6:40 a.m. - 11:48 p.m.	15	15	15	15
1A - East Market	6:20 a.m. - 6:42 p.m.	60	60	60	-
1B - PVCC	6:45 a.m. - 6:12 p.m.	60	60	60	-
2A - Locust Ave	6:20 a.m. - 6:42 p.m.	60	60	60	-
2B - Southwood	6:45 a.m. - 6:15 p.m.	60	60	60	-
3 - Belmont	6:20 a.m. - 6:42 p.m.	60	60	60	-
4 - UVA Hospital, Fry's Spring, Downtown	6:30 a.m. - 6:25 p.m.	60	60	60	-
5 - Barracks Road to Walmart	6:15 a.m. - 10:55 p.m.	30	30	30	30
6 - Ridge, UVA & Downtown	6:45 a.m. - 6:15 p.m.	60	60	60	-
7 - Downtown to Fashion Square	6:30 a.m. - 11:42 p.m.	15	15	15	30
8 - Seminole & Downtown	6:30 a.m. - 6:25 p.m.	60	60	60	-
9 - Charlottesville High School	6:45 a.m. - 6:40 p.m.	60	60	60	-
10 - Pantops	6:15 a.m. - 7:12 p.m.	60	60	60	-
21 - (Night) Belmont	6:45 p.m. - 11:30 p.m.	-	-	-	30
22 - (Night) Prospect Ave, UVA Hosp.	6:45 p.m. - 11:30 p.m.	-	-	-	30
23 - (Night) PVCC	6:45 p.m. - 11:12 p.m.	-	-	-	60
24 - (Night) Pantops	7:15 p.m. - 11:35 p.m.	-	-	-	60

Table 1-3
CAT Sunday Fixed-Route Service Characteristics

Route	Span of Service	Frequencies [min]			
		AM Peak	Midday	PM Peak	Evening
UVA FREE Trolley	8:00 a.m. - 5:42 p.m.	30	45	45	-
7 - Downtown to Fashion Square	7:45 a.m. - 5:57 p.m.	30	30	30	-

1.4 Other Service Providers

Two other public transit agencies, University Transit Service for the University of Virginia and JAUNT Paratransit Service, have major presences in the Charlottesville area.

University of Virginia University Transit Service (UTS)
UTS is the transit service UVA provides to its students, faculty and staff. UTS operates six routes while classes are in session, with service generally between approximately 6:00 a.m. to 8:00 p.m. except for the Colonnade Shuttle which runs until 10:25 p.m. The Stadium/Hospital Shuttle has a split schedule with an early morning and afternoon/evening operation. The Northline and University (U-Loop) routes operate on Saturdays. Frequencies on specific bus routes generally range from 15 to 30 minutes. UVA's service area includes the UVA Grounds, north to the Barracks Road Shopping Center area, south along Jefferson Park Avenue and east to UVA's Hospital. UTS is funded through student activity fees, thus there is no fare collected on-board the buses. The general public is also permitted to ride "fare-free" through a reciprocal agreement with CAT.

JAUNT Paratransit Service
The City of Charlottesville and Albemarle County jointly fund paratransit service in the local area through JAUNT, Inc. Established in 1975, JAUNT grew in its service offerings over the years, becoming a public corporation owned by five local governments in 1982. JAUNT is a regional public transportation system providing demand response service to the citizens of Charlottesville and five surrounding counties in Central Virginia (Albemarle, Fluvanna, Louisa, Nelson, and most recently, Buckingham). In addition to ADA paratransit service, JAUNT provides human service agency transportation, rural demand response service, and commuter route service. Most of JAUNT's commuter routes, as well as midday rural demand response service, provide public transportation between the outlying rural areas and Charlottesville. In FY 2010, JAUNT made over 300,000 trips carrying riders to work, doctor's appointments, shopping and other leisure activities.

JAUNT provides paratransit service within the entire Charlottesville urbanized area. Thus, JAUNT's service area is greater than the ADA minimum-required ¾ mile buffer around CAT fixed routes. JAUNT provides paratransit service from 6:15 a.m. to 11:50 p.m. on Mondays through Saturdays, and from 7:30 a.m. to 10:00 p.m. on Sundays, which is a longer span of service than CAT's service hours.

1.5 Fare Structure

CAT buses accept cash fares and passes. Base fare for a one-way trip is 75 cents; reduced base fares are 35 cents. Day passes are available for $1.50 while monthly passes cost $20.00. Reduced rates for these passes are 75 cents and $10.00, respectively. Those aged 65 and older, persons with disabilities and holders of Medicare cards are eligible for reduced fares.

Free rides are available for:

- Children aged five years and younger when accompanied by an adult
- Qualifying disabilities
- University of Virginia students, faculty and staff upon presenting a valid University ID card

Additionally, CAT offers two programs for youth to ride buses for free. The Summer Youth Ride Free program lets youth aged 6 to 18 years old ride fare-free from June through August. CAT-provided picture IDs are required. Charlottesville High School students can ride free year round with a valid CAT picture ID.

Fare for JAUNT trips varies by residency and distance. The fare for a JAUNT ADA trip is $1.50 for qualifying passengers within the city and within the Charlottesville Urbanized area. The base fare for the general public within the urbanized area is $15.00. Fares for commuter routes into Charlottesville vary between $2.00 and $40.

1.6 Vehicle Fleet

CAT owns and operates an active revenue fleet of 36 buses. Model years for these vehicles are spread over years 1998 through 2011 with the majority of vehicles from years 2001 and 2008. Two Gillig buses from 2011 are hybrids. CAT plans to replace many of its clean diesel vehicles with diesel-electric hybrids within 10 years. All buses on every CAT route are fully accessible. Each bus also has a two-bicycle rack installed on the front. Table 1-4 summarizes the existing CAT fixed-route revenue fleet.

As previously noted, the City does not directly operate paratransit service, and thus owns no paratransit vehicles.

Table 1-4
CAT Fixed-Route Revenue Fleet

Bus Type & Size	Vehicle ID	Make	Year	Num. of Vehs.	Useful Life	Years Left After 2012
35 foot bus	821, 822, 824, 827	New Flyer	1998	4	14	0
	840, 841	New Flyer	2001	2	13	2
	100, 101, 102, 103, 105,106, 107	Gillig	2008	7	12	8
	108, 109, 110, 111	Gillig	2010	4	12	10
29 foot bus	843, 845, 846	Opus	2001	3	11	0
	842, 844	Opus	2001	2	12	1
	847	Opus	2001	1	13	2
	849	Opus	2004	1	11	3
	200	Gillig	2008	1	10	6
29-foot hybrid bus	201, 202	Gillig Hybrid	2011	2	10	9
Trolley	830, 831	Chance	2002	2	13	1
	848	Chance	2002	1	12	2
	833	Chance	2004	1	11	3
	400	Opus	2008	1	10	6
Body-on-Chassis	302, 303	Ford	2007	2	4	0
	304	Ford	2007	1	5	0
	305	Ford	2008	1	5	1

1.7 Facilities

CAT's new Administration, Maintenance and Operations Base is located at 1545 Avon Street Extended near Interstate 64. The facility includes a vehicle maintenance facility, bus storage and parking, a washing station, a fueling station, and houses the administration and dispatcher's offices. This facility opened in 2010.

In March 2007, CAT also began operating out of the Downtown Transit Station (DTS) located at 615 East Water Street. Sixteen of the 17 CAT routes serve the DTS. The indoor facilities of the DTS are open Monday through Saturday from 8:00 a.m. to 8:00 p.m. and Sundays from 9:00 a.m. to 5:00 p.m. Bathrooms are located here as well as a small customer service office to inquire about route information, reduced fare applications, CAT paratransit cards, and daily and monthly passes. The DTS and maintenance facilities both have bicycle racks for locking up.

Much planning went into attaining US Green Building Council's LEED (Leadership in Energy and Environmental Design) certification for both buildings, with the DTS attaining LEED-Gold in 2008, the first public building in the Commonwealth to receive this level. It is expected the Administration, Maintenance and Operations Base building will also receive this level.

1.8 Bus Stop and Schedule Amenities

Many of CAT's bus stops are common to two or more routes. For example, 16 of 17 routes stop at the DTS. Similarly, many routes traverse West Main Street, Water Street, and Market Street. Many stops

typically have a sign that designates it as a CAT bus stop location, contains decals on the sign that identify the stop ID, which route(s) that serve that stop, a phone number for information, route map, and schedule. Trash receptacles and shelters are at select stop locations. Bus Finders are also at select locations and feature touch screens which indicate routes serving that stop and time until the next bus. At last count in the beginning of 2010, there were 386 stops, 130 benches, 68 trash receptacles, 39 shelters and 45 Bus Finders. There have been a handful of shelter and bench installations during the past year. Placement of each type of amenity is generally within the City's right-of-way and is usually dictated by higher ridership or activity level or customer requests.

CAT has worked with Google Transit to feature its routes on Google's mapping services. Routes and times are available for planning purposes. After inputting directions in the service, riders can click on a stop to gather more information about scheduled arrival times. Additionally, CAT's website features automatic vehicle locator (AVL) service mapping which shows stops by route. Clicking on a bus stop point allows riders to check the real-time arrival time of buses. A display screen at the DTS also reports next bus arrival times. In addition to these two interactive services, a free smartphone app called HoosBus shows information for both UTS and CAT routes, and predicted arrival times for buses.

1.9 Transit Security Program

CAT has a Safety Hazard and Security Plan in place that establishes policies, organization, roles and responsibilities for incidents, countermeasures and strategies. The plan also includes a section that addresses periodic assessments and review of the Safety Hazard and Security Plan.

1.10 Public Outreach

The City of Charlottesville engages the public prior to the implementation of any CAT fare change or major service change. The City's public outreach procedures are as follows:

1. Prior to the implementation of any CAT fare increase or major service reduction, the Transit Division shall solicit and consider public comment on the proposed fare increase or major service reduction. For the purposes of this policy, a major service reduction shall mean a reduction of twenty percent [20%] or more of the existing service level, using the number of revenue service hours as the measure of levels of service.
2. This policy shall be consistent with the requirements of 49 USC Chapter 53, Section 5307 (d)(1)(I), and with FTA guidelines for small urban grant recipients.
3. Notification to the public shall consist of, *at a minimum*, publication in a major local newspaper of a legal notice in the classified advertising section. This notice shall state the nature of the proposed fare increase or service reduction and offer the opportunity for a public hearing to be requested by contacting the Transit Manager.
4. If a public hearing is requested, the Transit Manager or his/her designee shall have the hearing placed on the next City Council regular meeting agenda. Comments received at the public hearing shall be recorded as part of the minutes of the Council meeting.
5. The Transit Manager and staff shall review and consider the public comments as part of the decision-making process for the implementation of service reductions or fare increases; the City shall give due consideration to comments made by the public.

2.0 GOALS, OBJECTIVES AND STANDARDS

The City of Charlottesville and Albemarle County already have in place transit-related goals and objectives in their respective Comprehensive Plans. Subsequent sections and service recommendations that are presented in this TDP aim to support these goals and objectives. Because it is not the intent of the TDP to modify or change previously-established goals and objectives, the following pages attempt to summarize and reiterate Charlottesville's and Albemarle County's commitment to these actions. The intent of this chapter is to reflect the establishment of adopted goals and objectives by both governmental entities for the development and advancement of transit services and document the commitment for continual review and update of these goals and policies.

2.1 City Comprehensive Plan Goals and Objectives

The City's adopted 2007 Comprehensive Plan identifies the following transportation system goal:

> *To provide a safe, efficient transportation system that reduces single occupancy vehicle travel (from 61 percent to 50 percent for commuters) by prioritizing options for mode of travel, while at the same time enhancing the quality of life in the City, facilitating development in priority locations, preserving valued cultural resources, reducing greenhouse gas emissions and conserving natural resources.*

The system-wide goal is comprised of goals and objectives from the following five categories as they specifically relate to transit:

- **Regional** – Addresses travel around the City
- **Local** – Addresses travel through the City
- **Parking** – Addresses parking issues within the City
- **Modal** – Addresses objectives that try to reduce solo driving and increase the use of other modes of travel.
- **Financial** – Addresses means for financing the goals and objectives.

Regional Goals:

- Reduce the number of single-occupancy vehicle trips.
- Limit the use of non-renewable fuel for vehicles, specifically gasoline.
- Establish an adequate regional roadway network to handle regional traffic.
- Increase regional access to transit for regional travel.
- Develop information regarding regional travel patterns to address congestion within the City and region.

Regional Objectives:

- Increase incentives and opportunities for use of other modes of travel such as walking, biking, transit, and carpooling, as well as explore altering land use patterns and disincentives for driving.
- Increase alternative fuel access, develop a plan to replace City vehicles with vehicles that are more environmentally friendly, create incentives for those who use alternative fuels.

- Actively participate in the planning for new regional facilities such as the Eastern Connector and Sunset/Fontaine Avenue Connector.
- Evaluate regional priorities in CHART and MPO plans.
- Actively participate in the establishment of a Regional Transit Authority and encourage bicycle, pedestrian and transit connections (including attention paid to Sunday and night service) between the County and City.
- Cooperate with the County in exploring express bus lanes and other transit improvements north of the City.
- Actively participate in the exploration of a streetcar on West Main and Emmet Streets.
- Continue to expand transit service and increase ridership.
- Identify park and ride opportunities by locating sites and working with the County.

Local Goals:

- Efficiently manage the capacity of the arterial network, relieving congestion and increased traffic on local streets.
- Develop an efficient transportation system without doing so at the cost of neighborhood character due to transportation improvements.

Local Objectives

- Utilize Travel Demand Management strategies (for local employers including the City of Charlottesville) and developing a plan for the City.
- Continue to use Transportation System Management techniques such as Intelligent Transportation Systems to coordinate traffic signals, communicate emergencies, weather and incidents to drivers, and promote transit using preemption.
- Develop Access Management standards for new development and redevelopment.
- Identify multimodal solutions to reduce solo driving.
- Identify additional roadway connections to improve the grid.
- Utilize Context Sensitive Design to improve the roadway network.

Parking Goals:

- Provide parking to adequately meet demand and support economic vitality without sacrificing aesthetics, minimizing environmental impacts and accommodating pedestrians, bicyclists and transit users.

Parking Objectives:

- Provide public parking while adjusting prices to encourage transit use.
- Explore park and ride lots and examine parking exempt zones.
- Initiate parking study addressing impact of parking on transit feasibility.
- Encourage employers to provide alternative commute mode incentives
- Work with the University of Virginia to see how parking incentives and disincentives may encourage university affiliates to live closer or use alternative modes.

Modal Goals:

- Increase safer accommodations for pedestrians, bicyclists and citizens with disabilities within existing roadway network.

Modal Objectives:

- Provide design features on existing roadways to improve the safety and comfort level of all users by enhancing the pedestrian and bicycle facility network.
- Complete the sidewalk network through a priority system.
- Evaluate ways to increase pedestrian travel.

Financial Goals:

- Acquire adequate funding for growing transportation needs.

Financial Objectives:

- Identify additional funding sources for improvements and potential for system operations revenues.
- Create a regional advocacy comprised of all jurisdictions to affect statewide changes in transportation funding.
- Explore the establishment of a Transportation District and impact fee service areas to fund improvements.

Updates to the Comprehensive Plan in February 2011 noted a number of transportation related objectives had been met or have been started and are ongoing. Completed objectives include the following:

- Most aspects of the Travel Demand Management plan for Charlottesville are presently in place.
- Parking study completed addressing impact of parking on transportation network.
- Street car feasibility report concluded it was too expensive to currently pursue.

Objectives that have been identified as "ongoing" include:

- Support TJPDC through MPO membership.
- Public parking and pricing initiative: Garrett Street project complete, other initiatives forthcoming.
- Pedestrian Safety Improvements ongoing to improve ADA access as are Bicycle Safety Group and Context Sensitive Design initiatives.
- Continuation of park and ride exploration with TJPDC through examination of commuting trends.

2.2 City Budget and the P3: Plan, Perform, Perfect Process

During the summer of 2008, as part of the City budgeting process, City staff refined a performance management system called P3: Plan, Perform, Perfect. The goal of P3 is to allow the City to create intentional goals that are aligned with the City Council Strategic Vision and have a way to meet them. The P3 Process has four established goals pertinent to all departments of City of Charlottesville government:

1. Reliable and Safe Operations and Infrastructure
2. Planned, Sustainable and Environmentally Sensitive Community
3. Great Place to Work
4. Efficient and Effective Service Delivery

Because P3 is a relatively new initiative, not all departments have fully developed plans. Those with developed P3 Plans report back to the City on their performance measures or work with the City to refine goals. Charlottesville Area Transit (CAT) is currently working with the City on goals one, three and four. The second goal of "Planned, Sustainable, and Environmentally Sensitive Community" has two performance measures relatable to CAT: Passenger Trips (or passengers) per Gallon of Fuel (PPG) and Passenger Trips. PPG involves both ridership and fuel consumption and shows a snapshot of efficiency; the goal is to increase PPG. PPG increases as more passengers fill buses (more efficient trips) and as vehicles become more efficient (more efficient fuel technologies). Both ridership and vehicle efficiency have increased during the years PPG has been measured resulting in increasing PPG for 2009 and 2010. In January 2011 CAT purchased the first vehicles of its hybrid fleet, helping to reduce fuel consumption. CAT plans to switch many vehicles in its fleet to hybrid vehicles as funding allows. Switching to hybrid vehicles also helps fulfill CAT's sustainability goals which are tied to the P3 process. Ridership has increased every year since 2005 due to additional routes, night service, fare-free service and marketing, and CAT has set a target of increasing total ridership by 3 percent each year through marketing and system improvements.

2.3 Albemarle County Comprehensive Plan Goals and Objectives

Primary components of the County's transportation planning efforts include a number of documents. The Albemarle County Land Use Plan within the County Comprehensive Plan was adopted in 1996, amended in 2005, and covers years 1996 through 2016. Transportation plans are included within the Land Use Plan section.

General Principles of the County Comprehensive Plan:

1. Plan, establish, and maintain a comprehensive County transportation system which supports the growth management policy and provides for necessary public safety.
2. Establish a transportation system that supports the preservation and enhancement of land use and environmental preservation goals, and that facilities are developed and built in a manner sensitive to the environment.
3. Encourage both the reduction of traffic congestion, pollution and energy consumption, vehicular miles traveled; and increased mobility of the general public, especially handicapped and the disadvantaged, through the increased use of public transportation, car/vanpooling and park and ride lots.
4. Support regional transportation planning efforts by utilizing the policies of the CHART Plan as the transportation principles for the County.

Traffic Reduction Goals:

The County views CAT as one of many alternative transportation initiatives that can reduce automobile dependency which can lead to reduced maintenance costs for roads and reduced use of fuel and pollution. The following goals, in conjunction with the previous, help to support this view:

- Implement County related recommendations of the Charlottesville Transit Development Plan, and participate in its update which occurs every five years
- Continue to support Thomas Jefferson Planning District Commission (TJPDC) Rideshares services and the Commuter Information Team (CIT).
- Participate with TJPDC, MPO, and Rural Area Transportation Long Range Plan to develop a regional plan for park and ride lots.

- Continue to work with area employees to reduce single occupancy commuter vehicles.

Recommendations:

- Identify methods of funding transit services and develop a funding structure/program to support transit in the County.
- Expand transit service in the Urban Area, and to the Hollymead, Cedar Hill Mobile Estates and Piney Mountain Communities.
- Utilize the Transit Development Plan and other studies (including MPO/UnJAM studies, Master Plans, and PACC Area B Studies) to assist in determining the location and timing for the provision of transit services.
- Consider expansion of service hours to include nights and weekends on appropriate routes to improve ridership and service.
- Continue to recognize and support JAUNT as the primary public transportation provider for rural Albemarle County and the County's transportation disadvantaged.
- Continue to support MPO and JAUNT ride-sharing services.
- Participate with MPO and JAUNT to develop a regional system of park and ride lots.
- Work with area employers through MPO to encourage development of ridesharing/vanpooling programs and travel demand reduction programs.
- Encourage development of ridesharing and travel demand reduction programs in evaluating rezoning and parking lot requests for major industrial, office, and commercial projects.

2.4 UnJAM 2035 and UnJAM 2025

The primary goal of the United Jefferson Area Mobility Plan (UnJAM 2025) was to create a balanced, multimodal transportation network by improving connections, mobility and livability throughout the region. UnJAM 2025 combined the Charlottesville-Albemarle Regional Transportation (CHART) Plan for the MPO with the Rural Area Transportation Long-Range plan for the five-county Thomas Jefferson Planning District. The Rural County Plans organized major projects to help the County Board of Supervisors and VDOT negotiate and set priorities. The CHART plan is required by federal law and is a list of priority projects over a 20-year horizon.

In 2007 VDOT began an initiative to have all rural areas have a regional long range plan. The MPO and the TJPDC took the opportunity to update UnJAM 2025 into one long range plan for the region. Therefore, UnJAM 2035 is the 2009 update to UnJAM 2025. There is a heavy emphasis on regional transportation networks in this update. An update to UnJAM 2035 will be complete by 2014.

UnJAM 2025 had three overarching goals: 1) improve regional connectivity; 2) improve mobility in neighborhoods, towns, and counties; and 3) make transportation choices that foster livable communities. The following elements will support those goals and help to complete what UnJAM 2025 calls a transit 'customer delivery system' needed for an efficient, cost-effective transit operation. Further, these elements will increase the mobility of the general public, especially the underserved, elderly, and handicapped.

- Completion of a well-connected network of roadways parallel to major highways, with better connections within and between neighborhoods.
- Re-engineered intersection and corridor design, along with added lanes and capacity improvements, to improve operational efficiency and safety.

- Fast, frequent, dependable transit service with seamless connections throughout the region.
- A terrain-modified grid of smaller streets serving more compact development forms in the suburban and rural developments.
- Well-executed design details for pedestrian-friendly streets, bike lanes and trails, transit stops, safer intersections and pedestrian crossings.
- Improve connection and travel throughout the region.
- Improve mobility within neighborhoods.
- Make transportation choices which help foster livable communities.

UnJAM 2035 addresses transportation planning both at the regional and local level. The Plan adds a fourth goal to the original three: address climate change at the local level. The plan also highlights the need to incorporate a variety of modes and policies across the region to improve connections and increase mobility to improve the quality of the existing network through technology and better policy at a time of less federal funding. At the local level, increased connectivity of streets, the use of complete streets policy, and support of a variety of modes is addressed. The following are regional mobility goals from UnJAM 2035:

Improved, Expanded Roadway Network

- More complete network of parallel and connector roads
- Re-engineer existing roads for increased capacity, safety, and enhanced business environment
- Develop new roadway designs for balanced, multi-modal performance

Efficient Transit System integrated with other travel modes

- Develop Enhanced Bus, Bus Rapid Transit (BRT), or Streetcars for fast, frequent, dependable service on major corridors
- Commuter Express service to outlying areas
- Improve Regional Rail service
- System improvements for downtown and neighborhoods
- Technology implementation to maximize efficiency and convenience

Pedestrian Friendly Streets and Highways

- Complete and connect sidewalk system
- Safe, usable crosswalks with pedestrian refuges
- Better lighting, signage, landscaping and signals

Complete Bicycle Network and Amenities

- On-road bike lanes on urban streets
- Off-road multi-purpose trails along major corridors
- Protected parking at all destinations

Improved Integration & Support for Ridesharing and Travel Demand Management

- Designated travel lanes for car/vanpoolers
- Enhance employer-based incentives
- Improve and increase park and ride lots
- Improve coordination of TDM strategies with work, education and special events

Safe & Efficient Freight Movement

- Separate freight movements from passenger travel where possible
- Support on-time delivery needs of business and industry

Policy and Regulatory Changes

- Amend codes and standards for more flexible roadway and development designs
- Adjust funding formulas to deliver a truly multi-modal system

- Expand modeling and forecasting to coordinate transportation and land use planning

2.5 Service Performance Standards

As previously noted, the City of Charlottesville presently has two transit-related performance measures in place as part of its Plan, Perform and Perfect (P3) process. CAT is monitoring passenger trips and passengers per gallon (PPG).

The application of performance standards varies among transit agencies. Some transit agencies have a robust monitoring program to keep track of specific service standards as a means to determine when service modifications are warranted. One of the Technical Memorandums in the RTA Plan presented potential service standards for Charlottesville-Albemarle County. That Technical Memorandum noted the availability of the Transportation Research Board's *Transit Capacity and Quality of Service Manual* (TCQSM) as a program that can measure the quality of service as perceived by customers. The TCQSM suggests ratings of "A" to "F" for various service characteristics. Another potential source for standards is in the Transit Cooperative Research Program's (TCRP) *Synthesis 10: Bus Route Evaluation Standards* (1995). That report identifies service measurements for the following categories: route design, schedule design, economic and productivity, service delivery, and passenger comfort and safety.

The RTA Plan suggested performance standards that focused on the following categories:

- Service Coverage – includes measures that address service availability, service frequency and span of service
- Patronage Convenience – includes measures that address bus operating speeds, bus load factors, bus stop spacing, service dependability (on-time performance, missed trips), and accident ratio
- Fiscal Condition – includes measures that address farebox recovery ratios, service productivity measures (passenger trips per bus-hour) and average fleet age
- Passenger Comfort – includes measures that address number of passenger shelters, bus stop signage, revenue equipment features and condition, public information features

Other potential performance standards could be tied to passenger satisfaction survey responses. CAT surveys its passengers annually. Standards could be developed that address customer satisfaction.

It is recommended that CAT consider the eventual establishment of a service monitoring program and performance standards as part of this TDP effort. The development of such a program should be based on input from stakeholders including CAT riders. Measures to consider include qualitative and quantitative measures, at both a systems and route-level, and should utilize data that is normally collected by CAT staff. Monitoring could be done on either a monthly or quarterly basis. The service monitoring program should also identify potential steps to consider when routes fall below established measures.

3.0 SERVICE AND SYSTEM EVALUATION

This chapter presents findings from an extensive evaluation of CAT services. It begins with information regarding existing CAT service and system requirements. Historical and current ridership characteristics are then presented, followed by historical and current transit performance characteristics. Findings from a peer review are then noted, followed by results from a transit on-board survey that was conducted as part of this TDP work effort. Existing and future land use characteristics are then described, followed by a discussion of the outreach process that was conducted during this TDP. This chapter ends with a summary of CAT's Title VI and FTA Triennial Review findings.

As noted earlier, the development of this TDP has included a more extensive analysis of existing CAT service operations than what is typically required for a TDP. Much of the service evaluation presented in this TDP chapter can be found in greater detail in the following TDP-related Technical Memorandums:

- ✔ Tech Memo #1: Documentation of CAT Staff Input
- ✔ Tech Memo #2: Documentation of Stakeholder Input and Public Outreach
- ✔ Tech Memo #3: Ridecheck Survey Methodology and Results
- ✔ Tech Memo #4: On-Board Survey Methodology and Results
- ✔ Tech Memo #5: Evaluation of Existing Service and Route Profiles
- ✔ Tech Memo #6: Peer Agency Review
- ✔ Tech Memo #7: Latent Demand Analysis
- ✔ Tech Memo #8: Service Plan Recommendations
- ✔ Tech Memo #9: TDP Financial Requirements

3.1 Current CAT Service Coverage and System Requirements

As previously noted in Chapter 1, the City of Charlottesville provides fixed-route service on its CAT system on weekdays beginning at about 6:30 a.m. Service runs in the evenings until approximately 11:30 p.m. on its four night routes, the FREE Trolley, Route 7 and until about 11:00 p.m. on Route 5. Saturday service closely resembles Monday through Friday service except for differences in frequencies on some routes. Sunday service begins at about 8:00 a.m. and runs until about 5:45 p.m. Routes generally run between 30-minute to 60-minute frequencies Monday through Saturday, and approximately 30- to 45-minute frequencies on Sundays. Route 7 and the FREE Trolley run 15-minute frequencies Monday through Saturday. Figures 3-1 through 3-3 show the CAT fixed-route system.

Service frequencies vary on CAT routes depending on the route, time of day and service scenario (i.e., full vs. reduced schedule). Tables 3-1 through 3-3 present each route's span of service, frequencies and estimated service statistics for weekday, Saturday and Sunday service. Route service frequencies are on "clock" headways, with 15, 30 or 60-minute frequencies on weekdays and Saturdays. Estimated annual service statistics for CAT based on typical weekday, Saturday and Sunday service plans are as follows:

- Maximum buses in operation – 25 weekday, 19 Saturday, 4 Sunday
- Annual revenue bus-hours of service – 88,500
- Annual revenue bus-miles of service – 933,300

Figure 3-1
CAT Bus Route Alignments, Daily Service Monday Through Saturday

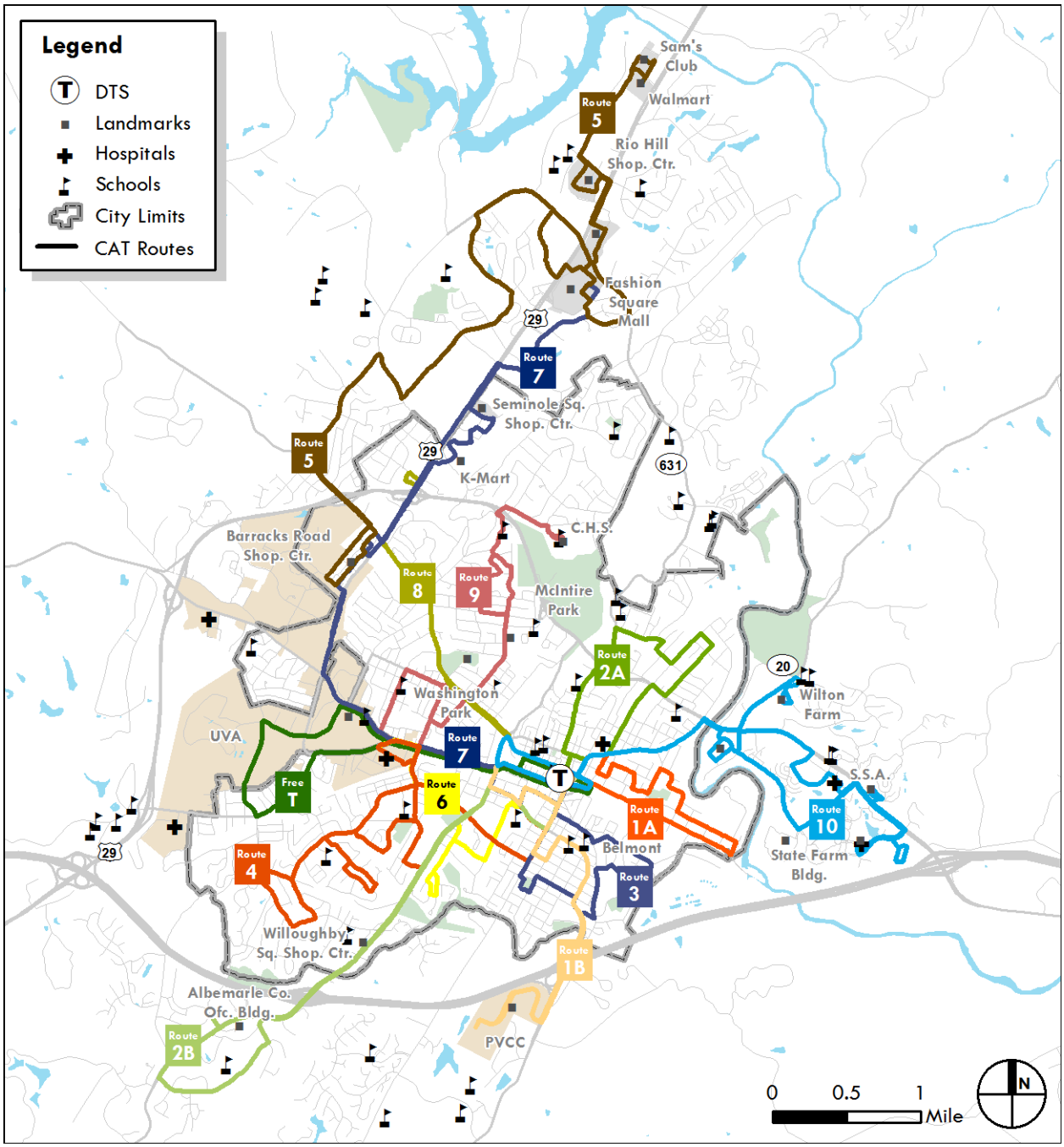


Figure 3-2
CAT Bus Route Alignments, Monday Through Saturday Night Service

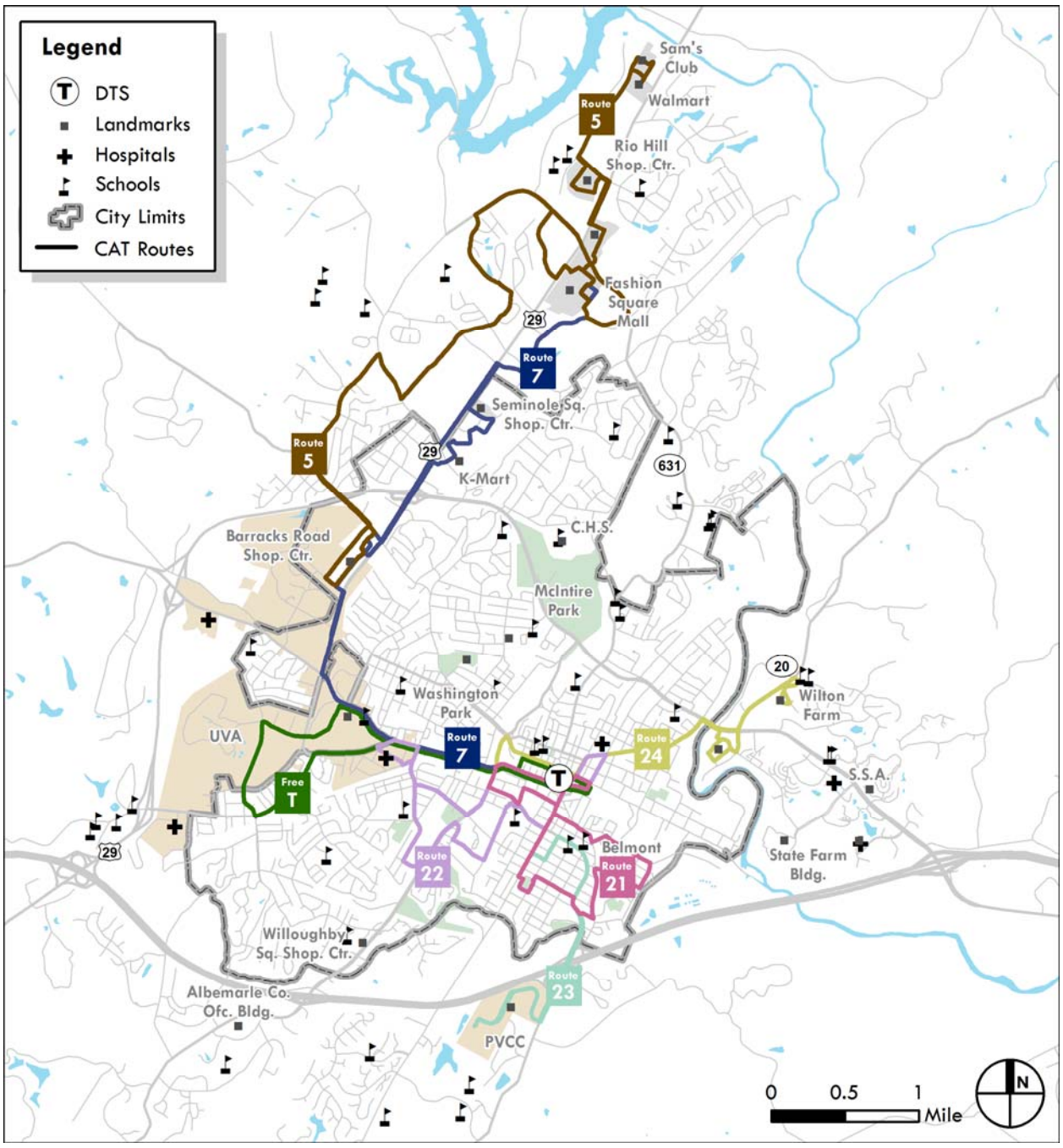


Figure 3-3
CAT Bus Route Alignments, Sunday Service

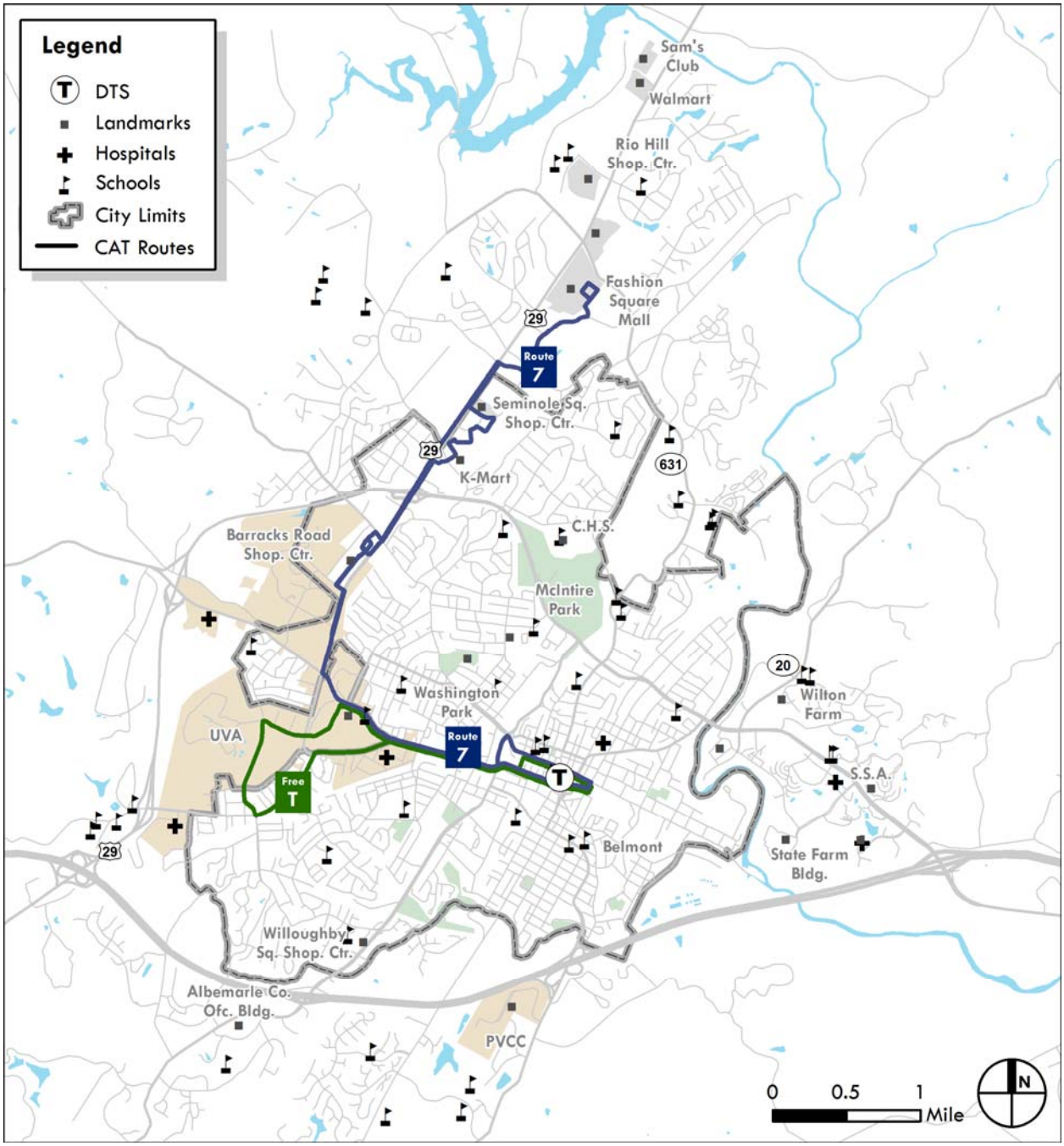


Table 3-1
Charlottesville Area Transit
Weekday Operating Plan

Route Number	Route Description	Interline	Start of First/ Last Trips	Service Frequency				Daily Trips	PM Peak Period Cycle Time			One-Way Distance (Miles)	Average Weekday		Bus Requirements			
				AM Peak Period	Midday Period	PM Peak Period	Eve. Period		Time (Min.)	Layover Time	Cycle Time		Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley		0640 - 2330	15	15	15	15	68	40	5	45	5.7	44.8	387.6	2	3	3	2
1	1A East Market	Y (1B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5	6.5	65	0.5	0.5	0.5	0
	1B PVCC	Y(1A)	0645 - 1745	60	60	60	n/a	12	27	3	30	7.5	6	90	0.5	0.5	0.5	0
2	2A Locust Ave	Y (2B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5.3	6.5	68.9	0.5	0.5	0.5	0
	2B Southwood	Y (2A)	0645 - 1745	60	60	60	n/a	12	30	0	30	8.2	6	98.4	0.5	0.5	0.5	0
3	Belmont	Y (6)	0620 - 1820	30	60	30	n/a	20	22	8	30	4.7	10	94	1	0.5	1	0
4	UVA Hospital, Fry's Spring, Downtown		0630 - 1807	30	60	30	n/a	19	55	5	60	13.9	19	264.1	2	1	2	0
5	Barracks Road to Walmart		0615 - 2215	30	30	30	30	63	40	10	90	8.2	47.3	516.6	3	3	3	3
6	Ridge, UVA & Downtown	Y (3)	0645 - 1815	30	60	30	n/a	19	30	0	30	6	9.5	114	1	0.5	1	0
7	Downtown to Fashion Square		0630 - 2315	15	15	15	30	116	42	6	90	6.3	73.5	730.8	4	6	6	2
8	Seminole & Downtown		0630 - 1800	30	60	30	n/a	19	55	5	60	8.5	19	161.5	2	1	2	0
9	Charlottesville High School		0645 - 1745	60	60	60	n/a	12	55	5	60	10.8	12	129.6	1	1	1	0
10	Pantops		0615 - 1815	60	60	60	n/a	13	57	3	60	11.8	13	153.4	1	1	1	0
21	(Night) Belmont	Y (22)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	4.9	5	49	0	0	0	1
22	(Night) Prospect Ave, UVA Hosp.	Y (21)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	5.6	5	56	0	0	0	1
23	(Night) PVCC	Y (24)	1845 - 2245	n/a	n/a	n/a	60	5	n/a	n/a	n/a	7.6	2.5	38	0	0	0	0.5
24	(Night) Pantops	Y (23)	1915 - 2315	n/a	n/a	n/a	60	5	n/a	n/a	n/a	5.5	2.5	27.5	0	0	0	0.5
TOTALS								**429**		82	**645**		**288.1**	**3044.4**	**19**	**19**	**22**	**10**

Note: Peak buses reflects number of buses in revenue service and does not reflect maximum number of buses operating at one time, which is 25.

Table 3-2
Charlottesville Area Transit
Saturday Operating Plan

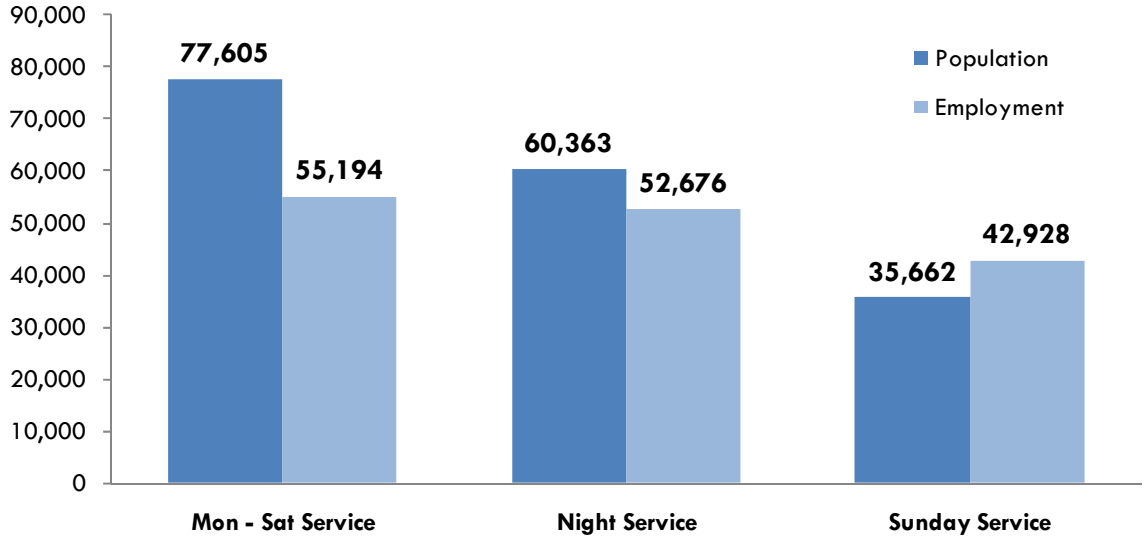
Route Number	Route Description	Interline	Start of First/ Last Trips	Service Frequency				Daily Trips	PM Peak Period Cycle Time			One-Way Distance (Miles)	Average Weekday		Bus Requirements			
				AM Peak Period	Midday Period	PM Peak Period	Eve. Period		Time (Min.)	Layover Time	Cycle Time		Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	UVA Trolley		0640 - 2330	15	15	15	15	68	40	5	45	5.7	44.8	387.6	2	3	3	2
1	1A East Market	Y (1B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5	6.5	65	0.5	0.5	0.5	0
	1B PVCC	Y(1A)	0645 - 1745	60	60	60	n/a	12	27	3	30	7.5	6	90	0.5	0.5	0.5	0
2	2A Locust Ave	Y (2B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5.3	6.5	68.9	0.5	0.5	0.5	0
	2B Southwood	Y (2A)	0645 - 1745	60	60	60	n/a	12	30	0	30	8.2	6	98.4	0.5	0.5	0.5	0
3	Belmont	Y (6)	0620 - 1820	60	60	60	n/a	13	22	8	30	4.7	6.5	61.1	0.5	0.5	0.5	0
4	UVA Hospital, Fry's Spring, Downtown		0630 - 1807	60	60	60	n/a	12	55	5	60	13.9	12	166.8	1	1	1	0
5	Barracks Road to Walmart		0615 - 2215	30	30	30	30	63	42.5	5	90	8.2	47.3	516.6	3	3	3	3
6	Ridge, UVA & Downtown	Y (3)	0645 - 1745	60	60	60	n/a	12	30	0	30	6	6	72	0.5	0.5	0.5	0
7	Downtown to Fashion Square		0630 - 2315	15	15	15	30	116	42	6	90	6.3	73.5	730.8	4	6	6	2
8	Seminole & Downtown		0630 - 1800	60	60	60	n/a	12	55	5	60	8.5	12	102	1	1	1	0
9	Charlottesville High School		0645 - 1745	60	60	60	n/a	12	55	5	60	10.8	12	129.6	1	1	1	0
10	Pantops		0615 - 1815	60	60	60	n/a	13	57	3	60	11.8	13	153.4	1	1	1	0
21	(Night) Belmont	Y (22)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	4.9	5	49	0	0	0	1
22	(Night) Prospect Ave, UVA Hosp.	Y (21)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	5.6	5	56	0	0	0	1
23	(Night) PVCC	Y (24)	1845 - 2245	n/a	n/a	n/a	60	5	n/a	n/a	n/a	7.6	2.5	38	0	0	0	0.5
24	(Night) Pantops	Y (23)	1915 - 2315	n/a	n/a	n/a	60	5	n/a	n/a	n/a	5.5	2.5	27.5	0	0	0	0.5
TOTALS								**401**		72	**645**		**267.1**	**2812.7**	**16**	**19**	**19**	**10**

Table 3-3
Charlottesville Area Transit
Sunday Operating Plan

Route Description	Interline	Start of First/ Last Trips	erating Ho Total Hours	Service Frequency AM Peak Period	Midday Period	PM Peak Period	Eve. Period	lculated Tr Daily Trips	PM Peak Period Cycle Time Time (Min.)	Layover Time	% Layover	Cycle Time	One-Way Distance (Miles)	Average Weekday Rev. Hrs.	Rev. Miles	Bus Requirements AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Free Trolley		0800 - 1700	9.75	30	45	45	n/a	16	42	3	7%	45	5.7	9.8	91.2	1	1	1	0
Downtown to Fashion Square		0745 - 1715	10.00	30	30	30	n/a	40	42	6	7%	90	6.3	25.1	252	2	3	3	0
								56		12	9%	**135**		**34.9**	**343.2**	**3**	**4**	**4**	**0**

Population and employment estimates for 2007 from the Thomas Jefferson Planning District Commission (TJPDC) Traffic Analysis Zone (TAZ) file were used to estimate accessibility (within ¼ mile) to CAT service for various periods by day of week. CAT provides accessibility to transit for many residents and employees that work within Charlottesville that otherwise would not have access to transportation. Figure 3-4 identifies transit accessibility characteristics with CAT's service area by day of week.

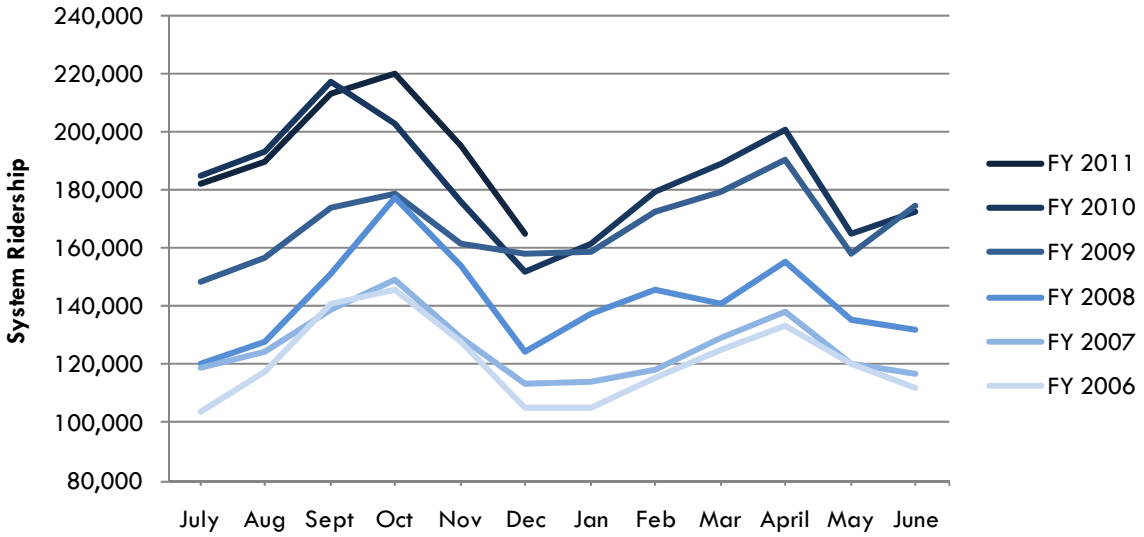
Figure 3-4
2007 TAZ Population & Employment Within ¼ Mile of CAT Route



3.2 Historical Ridership Characteristics

Monthly ridership reports from Charlottesville Area Transit were graphed to determine ridership trends since FY 2006. Figure 3-5 presents these trends.

Figure 3-5
System Monthly Ridership - FY 2006 through FY 2011 (partial year)

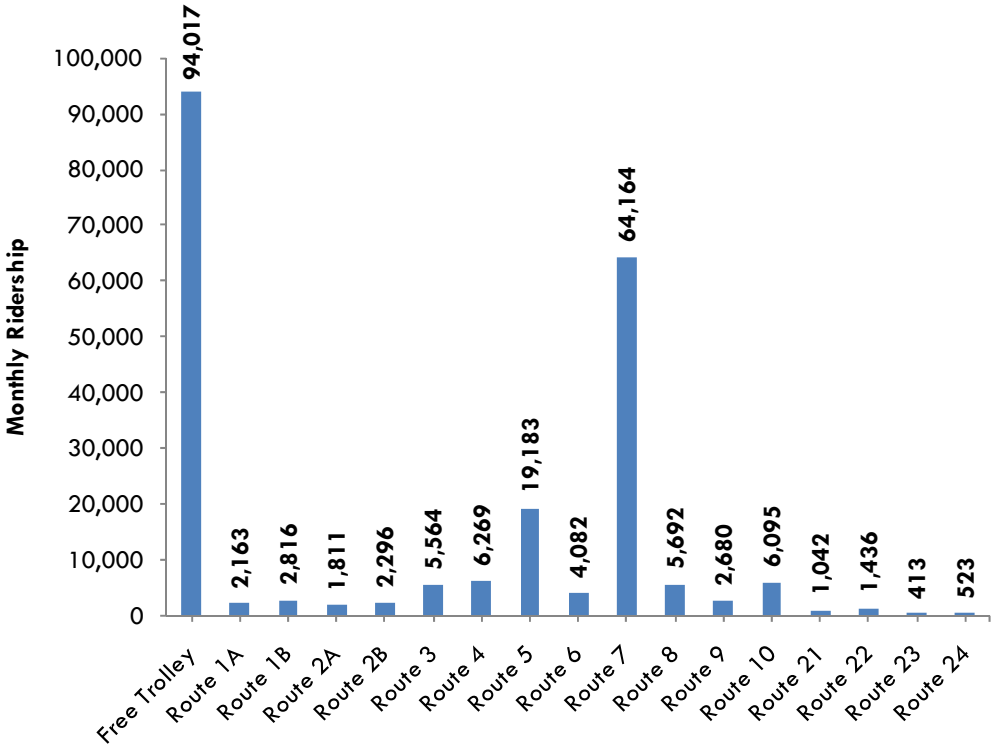


Annual fixed route ridership averaged 1.45 million in FY 2006 and has grown to almost 2.2 million in FY 2010 – a 51 percent increase. As shown in the above graph, October usually has the highest ridership and December typically has the lowest monthly ridership in each fiscal year. For this current fiscal year (FY 2011) ridership for July through September has tracked closely with FY 2010 ridership during the same months. FY 2011 October and November ridership, however, was significantly higher than FY 2010 ridership.

3.3 Current Ridership Characteristics

October 2010 ridership was examined more closely to determine ridership characteristics by route and is shown in Figure 3-6. October 2010 ridership was utilized for consistency with the timeframe when this project's ridecheck survey was completed. The Trolley was CAT's highest ridership route in October 2010 (42.7% of monthly ridership) followed by Route 7 (29.1% of monthly ridership). Route 5 was the third highest ridership route (8.7% of monthly ridership). All other CAT routes carried less than 20% of CAT's monthly ridership. It is important to note that all passengers can ride for free on the FREE Trolley route.

Figure 3-6
October 2010 CAT Monthly Ridership by Route



CAT's ridership reports do not break down ridership on a weekday, Saturday and Sunday basis. Therefore, ridership data from this project's ridecheck survey has been used to determine CAT ridership characteristics on a day of week basis and by route. The ridecheck survey was conducted from October 30 through November 6, 2010. Tables 3-4 through 3-6 present this information. Daily ridership counts from the ridecheck survey were as follows:

- Weekday – 7,763
- Saturday – 6,574
- Sunday – 2,012

On weekdays, Routes 5, 7 and the FREE Trolley account for over 74% of daily ridership. On Saturdays, these three routes account for over 82% of daily ridership.

System ridership from the ridecheck survey was also summarized by hour. Figures 3-7 through 3-9 present hourly CAT ridership for weekdays, Saturday and Sunday. On weekdays, A.M. peak period ridership (6 to 9 a.m.) accounts for 15.5% and p.m. peak period ridership accounts for 25% of daily ridership (3 to 6 p.m.). The highest weekday ridership hour was from 3 to 4 p.m. On Saturdays, ridership builds in the morning and is consistently over 500 passengers per hour between 11:00 a.m. and 6:00 p.m., with the highest ridership hour occurring from 4 to 5 p.m. On Sundays, ridership is highest in the 2 to 3 p.m. hour.

Table 3-4
CAT Weekday Ridership by Route

Route	Boardings	Alightings	Totals	% of Total
1A	87	81	168	1.1%
1B	154	160	314	2.0%
2A	68	67	135	0.9%
2B	169	170	339	2.2%
3	243	235	478	3.1%
4	359	359	718	4.6%
5	705	705	1,410	9.1%
6	207	215	422	2.7%
7	2,444	2,445	4,889	31.5%
8	274	274	548	3.5%
9	156	156	312	2.0%
10	267	267	534	3.4%
21	42	42	84	0.5%
22	83	83	166	1.1%
23	23	23	46	0.3%
24	12	12	24	0.2%
Trolley	2,468	2,471	4,939	31.8%
Total	**7,761**	**7,765**	**15,526**	**100%**

Table 3-5
CAT Saturday Ridership by Route

Route	Boardings	Alightings	Totals	% of Total
1A	53	46	99	0.8%
1B	25	34	59	0.4%
2A	43	38	81	0.6%
2B	105	110	215	1.6%
3	169	160	329	2.5%
4	125	125	250	1.9%
5	759	760	1,519	11.6%
6	93	102	195	1.5%
7	2,011	1,988	3,999	30.4%
8	163	163	326	2.5%
9	85	85	170	1.3%
10	229	229	458	3.5%
21	21	19	40	0.3%
22	25	27	52	0.4%
23	9	10	19	0.1%
24	18	17	35	0.3%
Trolley	2,658	2,644	5,302	40.3%
Total	**6,591**	**6,557**	**13,148**	**100%**

Table 3-6
CAT Sunday Ridership by Route

Route	Boardings	Alightings	Totals	% of Total
7	649	649	1,298	47.6%
Trolley	714	714	1,428	52.4%
Total	**1,363**	**1,363**	**2,726**	**100%**

Figure 3-7
CAT Weekday Hourly Ridership

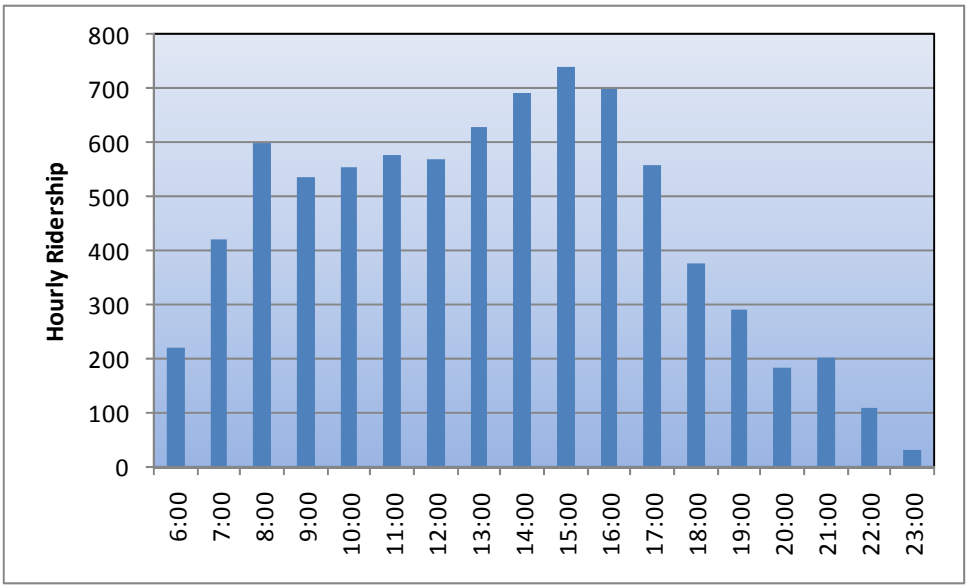


Figure 3-8
CAT Saturday Hourly Ridership

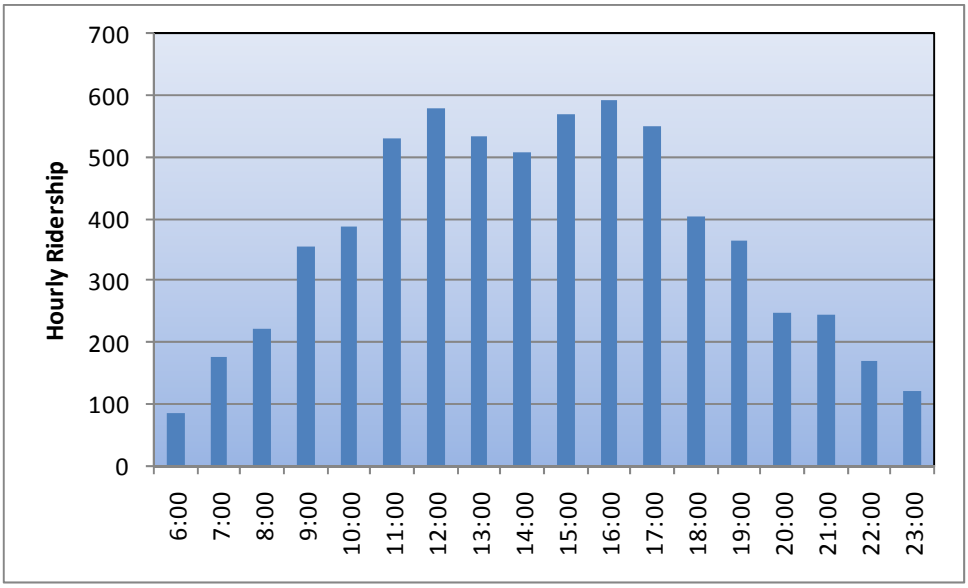
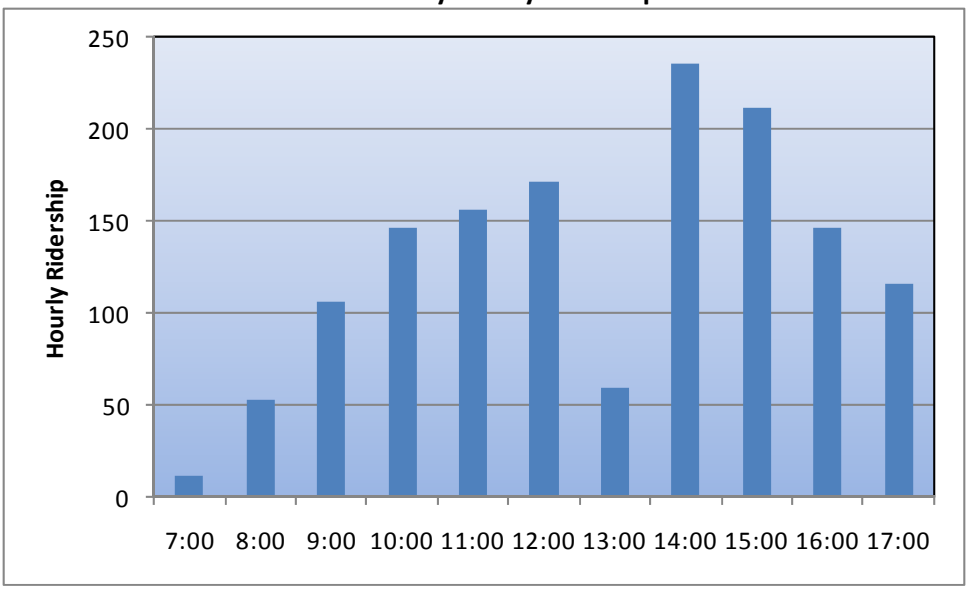


Figure 3-9
CAT Sunday Hourly Ridership

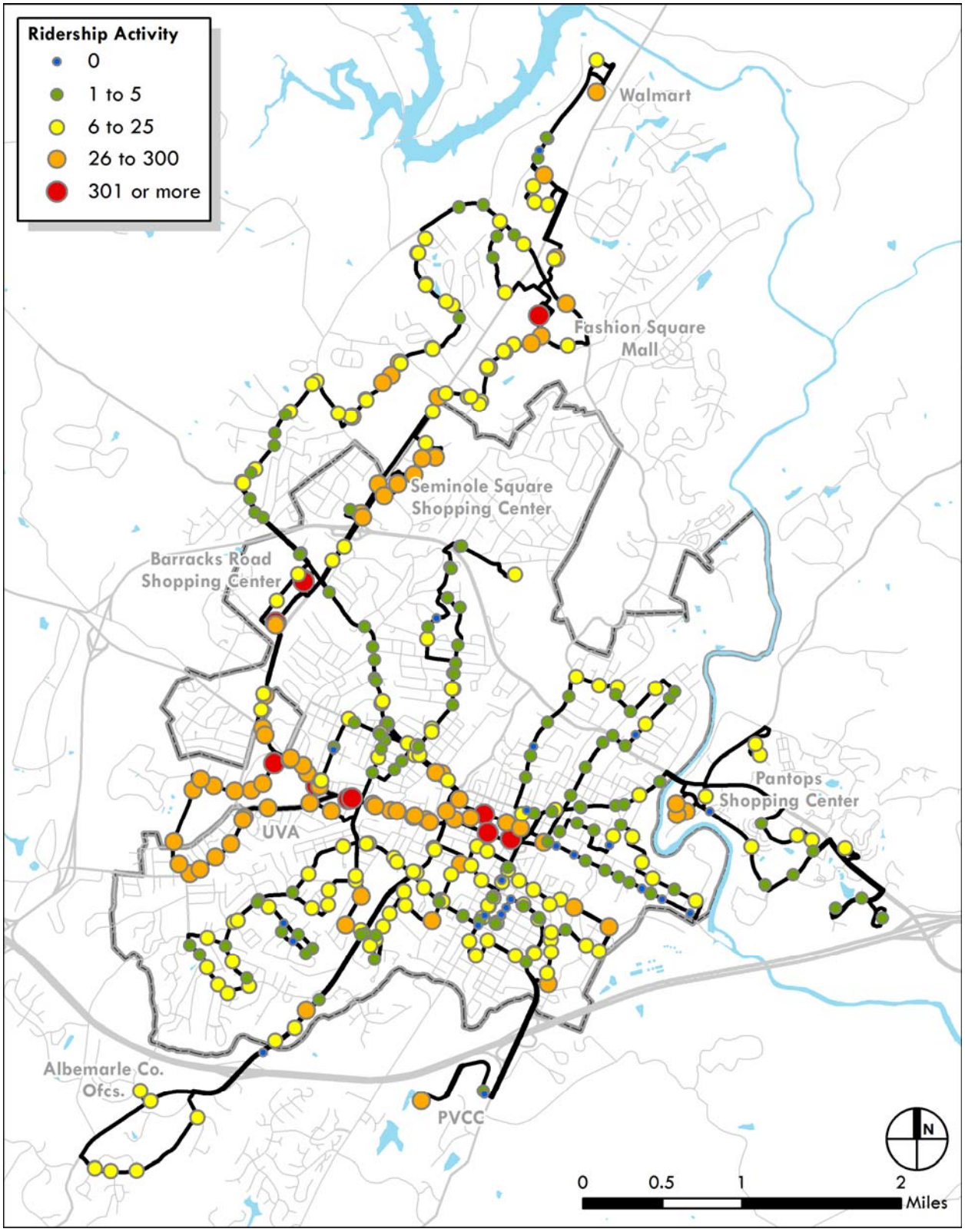


System ridership from the weekday ridecheck survey has been summed by bus stop. Figure 3-10 presents cumulative weekday ridership by stop. The stops with the highest number of boardings and alightings are outlined in Table 3-7. Cumulatively, these 11 stops account for 39% of the boarding and alighting activity within the entire CAT system.

Table 3-7
Most Utilized Bus Stops

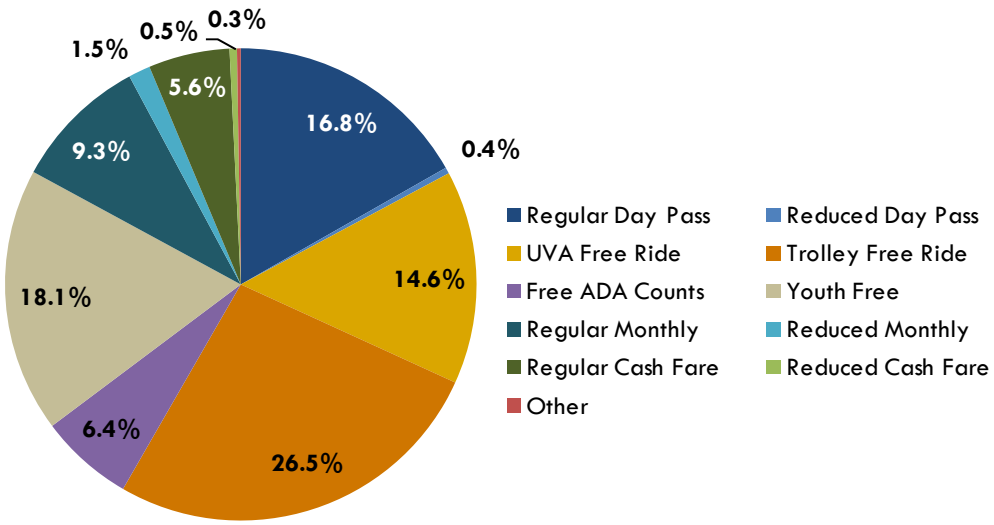
Stop ID	Stop Name	Total Ridership	Percent of Total
17333	Downtown Transit Station	2,054	13.3%
16596	Fashion Square Mall	754	4.9%
13249	Barracks Road Shopping Center at CVS	450	2.9%
11138	West Main St & 11th St SW	435	2.8%
11299	East Market St at 2nd St NE	368	2.4%
13265	Barracks Road Shopping Center at Kinkos	352	2.3%
11247	University Ave at Women's Center	345	2.2%
11129	West Main St & 11th St SW	335	2.2%
16680	Barracks Road Shopping Center opposite CVS	321	2.1%
11015	East Water St at 3rd St SE	308	2.0%
11908	UVA Chapel	308	2.0%
	Total	**6,030**	**39%**
	Systemwide Total	**15463**	**100%**

Figure 3-10
Cumulative Weekday Ridership by Bus Stop



Ridership reports were also reviewed to determine how CAT riders were paying for their fare. Figure 3-11 identifies ridership by fare category. Over 26% of system ridership comes from riders utilizing the FREE Trolley. That is followed by 18% of riders of youth riding free, nearly 17% of regular day pass use and nearly 15% of UVA affiliates utilizing a fare-free ride systemwide. In October, nearly 60% of riders enjoyed a fare-free ride.

Figure 3-11
Systemwide Fares by Class for October 2010



3.4 Historical Performance Characteristics

Historical and current ridership, service statistics and annual operating and maintenance cost data for CAT was reviewed to determine ridership and cost performance trends. Data from the National Transit Database (NTD) was used to determine performance characteristics from 2005 through 2009. FY 2009 is the most recent data available from the NTD. Specific performance measures that were evaluated are as follows:

Riders per Revenue-Hour

This metric provides a means to determine service productivity. Figure 3-12 presents riders per revenue-hour for CAT from 2005 through 2009. This metric has historically been increasing, and was around 22 riders per revenue-hour in 2009.

Riders per Revenue-Mile

This is another metric that reflects service productivity. Figure 3-13 presents riders per revenue-mile. This metric has also been increasing over the past five years. It was around 2.2 riders per revenue-mile in 2009.

Cost per Passenger Trip

This is a metric that reflects cost effectiveness. Figure 3-14 presents cost per passenger trip. This metric has steadily climbed since 2005 with a sharp peak in 2008 likely due in large part to increased fuel costs. It was just over $3.00 per passenger trip in 2009.

Cost per Revenue Bus-Hour

This is another metric that reflects cost efficiency. Figure 3-15 presents cost per revenue-hour. This metric was around $68 per revenue bus-hour in 2009.

Local Subsidy per Passenger Trip

This metric measures the level of local subsidy (as reported in NTD) provided per passenger trip. Figure 3-16 presents the local subsidy per passenger trip. The local subsidy has been decreasing since 2007, which may be partially attributable to CAT's increasing ridership.

Figure 3-12
Riders per Revenue-Hour

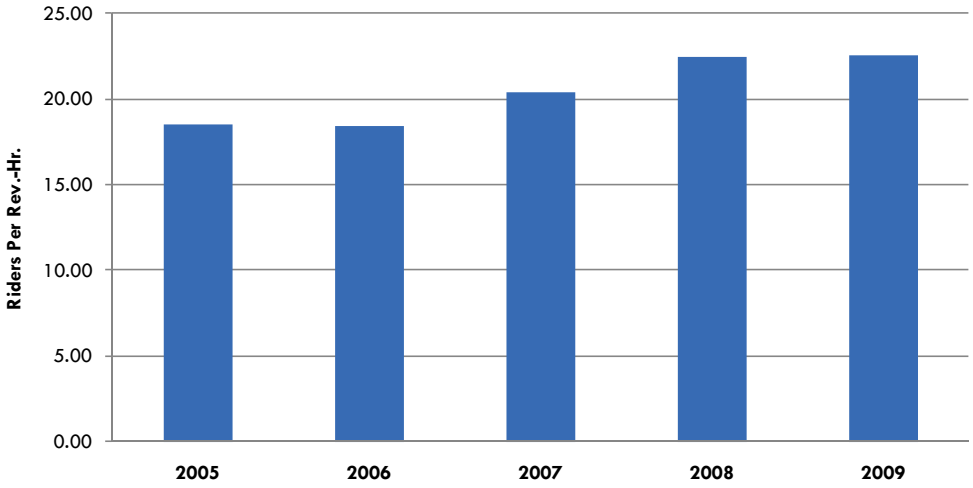


Figure 3-13
Riders per Revenue-Mile

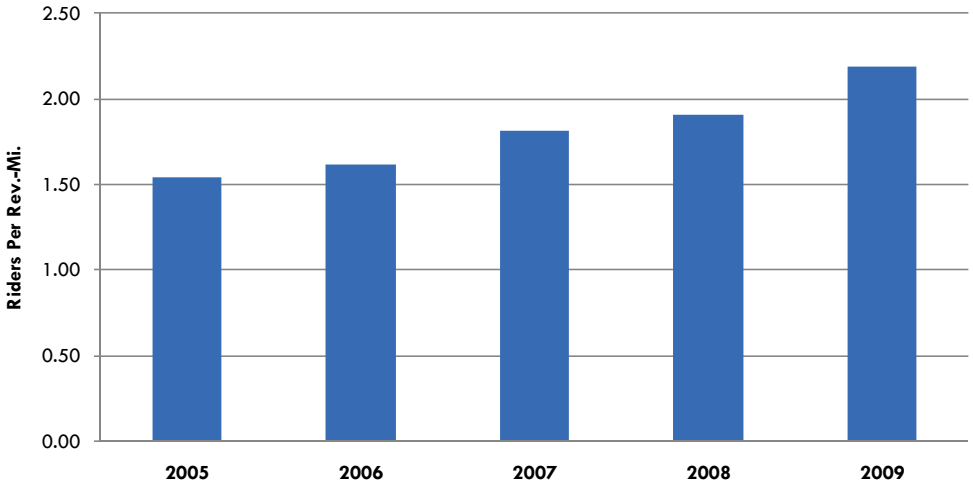


Figure 3-14
Cost per Passenger Trip

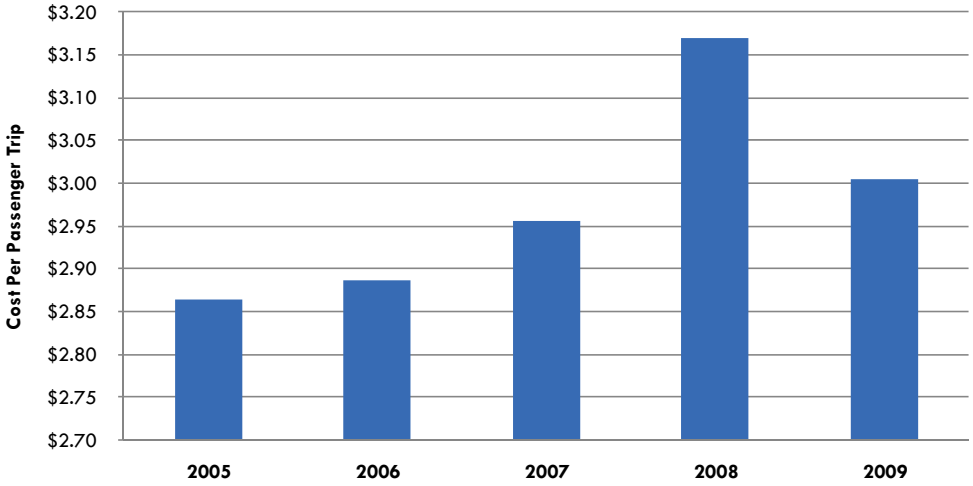


Figure 3-15
Cost per Revenue-Hour

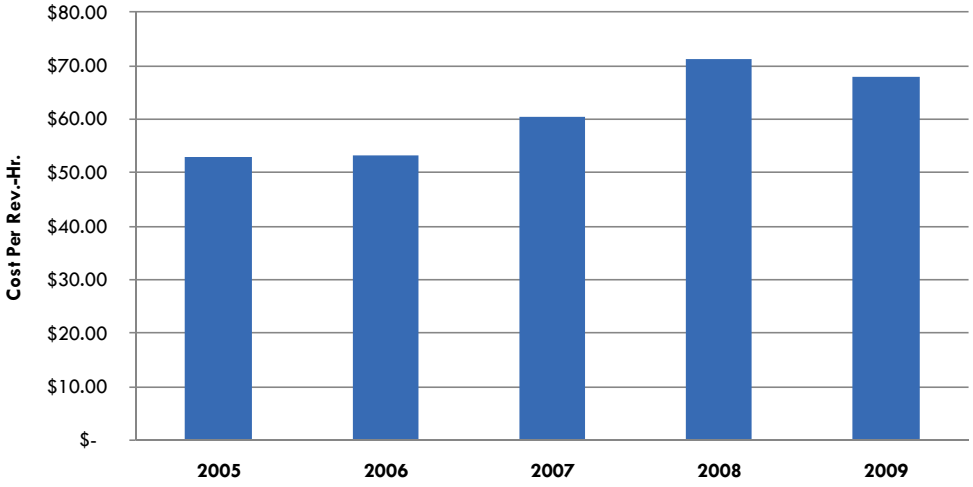
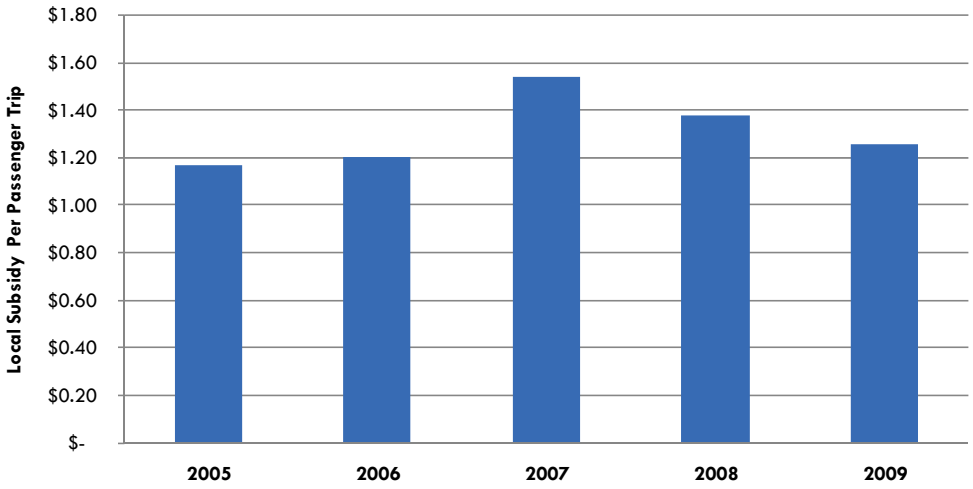


Figure 3-16
Local Subsidy per Passenger Trip



3.5 Current Performance Characteristics

Ridership data from this project's ridecheck survey (conducted October 30 through November 6, 2010) was used to determine more current service productivity measures. Specifically, ridership productivity was measured on the basis of riders per revenue bus-hour, riders per revenue bus-mile and riders per bus trip for weekday, Saturday and Sunday ridership. Tables 3-8 through 3-10 present these measures and rankings by day of week and by route. Overall, ridership for CAT is productive. Systemwide productivity measures are as follows:

Weekdays	Weekday Riders per Bus-Hour	26.6
	Weekday Riders per Bus-Mile	2.5
	Weekday Riders per Bus Trip	18.1
Saturday	Saturday Riders per Bus-Hour	25.3
	Saturday Riders per Bus-Mile	2.3
	Saturday Riders per Bus Trip	16.4
Sunday	Sunday Riders per Bus-Hour	46.0
	Sunday Riders per Bus-Mile	4.0
	Sunday Riders per Bus Trip	24.3

The Free Trolley is consistently the best performing route on weekdays, Saturdays and Sundays in all productivity measures. Route 7 is the second best performing route on weekdays and is the 2nd or 3rd best performing route on Saturdays, depending on the productivity measure.

Table 3-8
CAT Weekday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	2,468	(1)	68	36.3	(1)	44.8	55.1	(1)	387.6	6.4	(1)
1A	1A East Market/PVCC	87	(12)	13	6.7	(13)	6.5	13.4	(12)	65	1.3	(12)
1B	1B PVCC	154	(11)	12	12.8	(8)	6	25.7	(4)	90	1.7	(7)
2A	2A Locust Ave	68	(14)	13	5.2	(14)	6.5	10.5	(14)	68.9	1.0	(14)
2B	2B Southwood	169	(9)	12	14.1	(6)	6	28.2	(3)	98.4	1.7	(6)
3	Belmont	243	(7)	20	12.2	(9)	10	24.3	(5)	94	2.6	(3)
4	UVA Hospital, Fry's Spring, Downtown	359	(4)	19	18.9	(4)	19	18.9	(8)	264.1	1.4	(11)
5	Walmart to Barracks Road	705	(3)	63	11.2	(10)	47.4	14.9	(10)	516.6	1.4	(10)
6	Ridge, UVA & Downtown	207	(8)	19	10.9	(11)	9.5	21.8	(6)	114	1.8	(4)
7	Downtown to Fashion Square	2,444	(2)	116	21.1	(2)	76.8	31.8	(2)	765.6	3.2	(2)
8	Seminole & Downtown	274	(5)	19	14.4	(5)	19	14.4	(11)	161.5	1.7	(8)
9	Charlottesville High School	156	(10)	12	13.0	(7)	12	13.0	(13)	129.6	1.2	(13)
10	Pantops	267	(6)	13	20.5	(3)	13	20.5	(7)	153.4	1.7	(5)
21	(Night) Belmont	42	(15)	10	4.2	(16)	5	8.4	(16)	49	0.9	(15)
22	(Night) Prospect Ave, UVA Hosp.	83	(13)	10	8.3	(12)	5	16.6	(9)	56	1.5	(9)
23	(Night) PVCC	23	(16)	5	4.6	(15)	2.5	9.2	(15)	38	0.6	(16)
24	(Night) Pantops	12	(17)	5	2.4	(17)	2.5	4.8	(17)	27.5	0.4	(17)
TOTAL WEEKDAY		**7,761**		**429**	**18.1**		**291.5**	**26.6**		**3079.2**	**2.5**	

Table 3-9
CAT Saturday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	2,658	(1)	68	39.1	(1)	44.8	59.3	(1)	387.6	6.9	(1)
1A	1A East Market/PVCC	53	(11)	13	4.1	(11)	6.5	8.2	(10)	65	0.8	(9)
1B	1B PVCC	25	(13)	12	2.1	(16)	6	4.2	(16)	90	0.3	(16)
2A	2A Locust Ave	43	(12)	13	3.3	(13)	6.5	6.6	(13)	68.9	0.6	(13)
2B	2B Southwood	105	(8)	12	8.8	(8)	6	17.5	(5)	98.4	1.1	(8)
3	Belmont	169	(5)	13	13.0	(5)	6.5	26.0	(3)	61.1	2.8	(2)
4	UVA Hospital, Fry's Spring, Downtown	125	(7)	12	10.4	(7)	12	10.4	(9)	166.8	0.7	(10)
5 SB	Walmart to Barracks Road	759	(3)	63	12.0	(6)	47.4	16.0	(6)	516.6	1.5	(6)
6	Ridge, UVA & Downtown	93	(9)	12	7.8	(9)	6	15.5	(7)	72	1.3	(7)
7 NB	Downtown to Fashion Square	2,011	(2)	116	17.3	(3)	67.3	29.9	(2)	765.6	2.6	(3)
8	Seminole & Downtown	163	(6)	12	13.6	(4)	12	13.6	(8)	102	1.6	(4)
9	Charlottesville High School	85	(10)	12	7.1	(10)	12	7.1	(12)	129.6	0.7	(11)
10	Pantops	229	(4)	13	17.6	(2)	13	17.6	(4)	153.4	1.5	(5)
21	(Night) Belmont	21	(15)	10	2.1	(15)	5	4.2	(15)	49	0.4	(15)
22	(Night) Prospect Ave, UVA Hosp.	25	(13)	10	2.5	(14)	5	5.0	(14)	56	0.4	(14)
23	(Night) PVCC	9	(17)	5	1.8	(17)	2.5	3.6	(17)	38	0.2	(17)
24	(Night) Pantops	18	(16)	5	3.6	(12)	2.5	7.2	(11)	27.5	0.7	(12)
TOTAL SATURDAY		**6,591**		**401**	**16.4**		**261**	**25.3**		**2847.5**	**2.3**	

Table 3-10
CAT Sunday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	714	(1)	16	44.6	(1)	9.8	72.9	(1)	91.2	7.8	(1)
7	Downtown to Fashion Square	649	(2)	40	16.2	(2)	19.8	32.8	(2)	250.8	2.6	(2)
TOTAL SUNDAY		**1,363**		**56**	**24.3**		**29.6**	**46.0**		**342**	**4.0**	

Schedule adherence data was also collected for the month of October 2010 to determine on-time performance characteristics. Table 3-11 presents on-time performance characteristics by route and day of week. On-time was defined as a vehicle arriving no more than 1-minute early or 5-minutes late at designated timepoints along a route. Table 3-11 reflects average on-time performance for all timepoints for all routes. On-time performance tended to be negatively affected in the midday and PM Peak periods when traffic volumes were larger, and therefore, congestion was heavier.

Table 3-11
On-Time Performance Characteristics By Day of Week

Route	WEEKDAY					SATURDAY	SUNDAY
	AM Peak	Midday	PM Peak	Evening	Daily		
1A	93%	90%	90%	n/a	91%	80%	n/a
1B	83%	96%	92%	n/a	92%	69%	n/a
2A	67%	94%	92%	n/a	87%	87%	n/a
2B	87%	93%	100%	n/a	93%	73%	n/a
3	90%	86%	78%	n/a	84%	74%	n/a
4	93%	98%	37%	n/a	75%	62%	n/a
5SB	85%	86%	80%	80%	83%	76%	n/a
5NB	100%	82%	70%	89%	83%	75%	n/a
6	93%	79%	86%	n/a	85%	64%	n/a
7NB	86%	69%	74%	82%	75%	68%	81%
7SB	74%	67%	70%	85%	72%	72%	85%
8	33%	50%	76%	n/a	55%	92%	n/a
9	100%	76%	86%	n/a	85%	73%	n/a
10	70%	44%	14%	n/a	43%	66%	n/a
21	n/a	n/a	n/a	77%	77%	80%	n/a
22	n/a	n/a	n/a	81%	81%	91%	n/a
23	n/a	n/a	n/a	100%	100%	100%	n/a
24	n/a	n/a	n/a	96%	96%	85%	n/a
Trolley	88%	81%	72%	89%	82%	73%	63%

3.6 Peer Review Analysis

A peer review analysis was conducted as part of this TDP work effort to determine if CAT service effectiveness, cost effectiveness and service efficiency characteristics are in-line with peer agencies. Based on service area, population and population density, presence of a major university and fare compatibility for its students, and climate, the following four agencies were used as peer systems in this analysis

- Lynchburg, VA (Greater Lynchburg Transit Company)
- Harrisonburg, VA (Harrisonburg Transit)
- Athens, GA (Athens Transit and UGA Campus Transit)
- Columbia, MO (Columbia Transit)

The National Transit Database (NTD) was used to collect data for the peer systems with 2009 being the most recent release of data. As noted earlier, Technical Memorandum #6 presents detailed findings from this peer agency analysis. Key findings are summarized below:

Operating Budget: CAT's operating budget of approximately $6.2 million was one-third higher than the peer average of $4.6 million. Of the four peer systems, GLTC in Lynchburg was the most similar to CAT with respect to size of the annual operating budget.

Capital Budget: CAT's 2009 capital budget was the second highest ($5.4 million) compared to the 2009 peer average. Only GLTC in Lynchburg budgeted more at $6.1 million.

Ridership: CAT's and UTS' combined system ridership (4,929,934) was approximately 8.6 percent higher than the peer average (4,540,696)

Service Area Characteristics: CAT's service area (38 square miles) is nearly 9 percent larger than the peer average square miles (35 square miles). Its service area population (81,449) is about 24 percent larger than the peer average (65,747). CAT's service area's population density (2,143 persons per square mile) is about four percent lower than the peer average (2,232 persons per square mile).

Vehicle Utilization: CAT's and UTS' fleet size and peak utilization was greater than the peer average but very similar to Athens Transit and UGA Campus Transit. CAT also ran more revenue hours and revenue miles per peak vehicle than the peer average. The average age of CAT's fleet was similar to its peers.

Service Supplied: CAT and UTS operate more revenue-hours and revenue-miles per capita than the peer average. CAT and UTS also operate far more revenue hours and revenue miles per square mile than the peer average.

Service Productivity: CAT's average system is similar to the peer systems, excluding the exclusive on-campus services. CAT's service productivity was lowest among the peer systems when compared on a revenue hour basis. CAT's productivity was also among the lowest on a revenue mile basis.

Cost Efficiency: CAT's cost efficiency characteristics were weak when compared to the peer systems. Its operating cost per passenger trip was nearly twice the peer average and operating cost per revenue hour was nearly $6 higher than the peer average. However, CAT's cost per revenue mile was very comparable to its peers.

Farebox Revenues: CAT's farebox revenue generated about half the rate of the peer average (12% vs. 24%). Only Columbia Transit pulled a lower percentage from the farebox.

Source of O&M Funds: CAT had similar characteristics to the peer systems with regards to the percent of funding that comes from federal and state sources. While farebox revenues were less pronounced, these funds were offset by increased local contributions.

Source of Capital Funds: CAT's capital funding was very similar to its peer systems in Virginia. However when the agencies outside of the commonwealth were factored in, their capital funds received from federal sources were well above the peer average.

3.7 On-Board Survey Findings

Connetics Transportation Group (CTG) conducted an on-board survey for CAT in fall of 2010 as part of this TDP effort. This survey was conducted to determine trip origin and destination trip patterns and other travel-related and demographic data of CAT riders. CTG staff met with CAT operations staff to identify any unique characteristics of the service that may prove challenging to the scheduling process. Additionally, CAT senior staff lent input for the survey instrument used during the survey effort. Because CAT has recently over the past few years begun to conduct their own on-board surveys, the survey instrument used by CTG was created so that comparison of results between CAT's and CTG's survey instruments could be made. The on-board survey was scheduled for Thursday, November 4th and Friday, November 5th Factors were used to calibrate the findings to the weekday ridership recorded from the ridecheck survey.

A total of 836 survey forms were completed by CAT riders and used in the survey analysis. This represents a little more than 10% of total CAT riders. Technical Memorandum #4 presents detailed findings from the survey effort. Key findings are summarized below:

Rider Profile

Overall, the onboard survey data suggest that CAT's bus system ridership is heavily influenced by socio-economic characteristics and transit dependence. Pertinent rider characteristics are as follows:

- Riders use CAT for a variety of reasons but home-to-work-related travel is over 43% of overall travel purposes. There is also a significant amount of college-related travel (16%) on CAT with 51% claiming some sort of affiliation with the University of Virginia.
- CAT has a stable base of regular riders, with 86% indicating they ride at least once a week and 41% riding at least two days a week. Additionally, 77% claim they will continue to use CAT next year with about 25% claiming to have begun riding CAT this year.
- The largest majority (32%) of CAT's ridership base falls in the category of 16 to 24 years old, with 60% between 16 and 34.
- 37% of CAT's riders have no vehicle at home and 43% also indicated they have no driver's license. Additionally, 45% cite CAT as their only mode of transport.

- 32% of CAT's ridership reported an average household income of less than $10,000 and 24% report an average household income in the range of $20,000 and $34,999.

A final set of thirteen questions gauged rider's perceptions of CAT as a system. Overall, riders were generally pleased with CAT's service, with the Rider's Guide and driver courtesy scoring the highest. Lower marks were given to service hours and area and information posted at stops. Overall, riders have a positive perception of CAT's service characteristics, rating all criteria between "very good" and "good".

The second and third questions on the on-board survey asked for starting and ending locations for the riders' trips. These were compiled and geocoded. Only those trips with both an origin and destination were retained for analysis.

Figure 3-17 identifies stops and areas with the highest recorded number of either origin or destination points for riders. Albemarle Square Shopping Center and Fashion Square Mall, Barracks Road Shopping Center, UVA Medical Center (Lee Hospital) and the Downtown Transit Station had the highest number of trip start or end points.

Figure 3-18 shows individual origin and destination points with connecting trip lines. Each blue line represents a trip completed "as the crow flies". To gain some clarity on where the most trips were occurring between, TAZs were aggregated into a "superdistrict" level and trip starting and end points were aggregated to these zones.

Figure 3-19 shows nineteen superdistricts and major movements occurring between them. The major movements are between downtown and the east (UVA and commercial areas) and the Barracks Road Shopping Center to Fashion Square Mall commercial corridor.

Figure 3-17
Top Trip Origin & Destination Locations of CAT Survey Responses

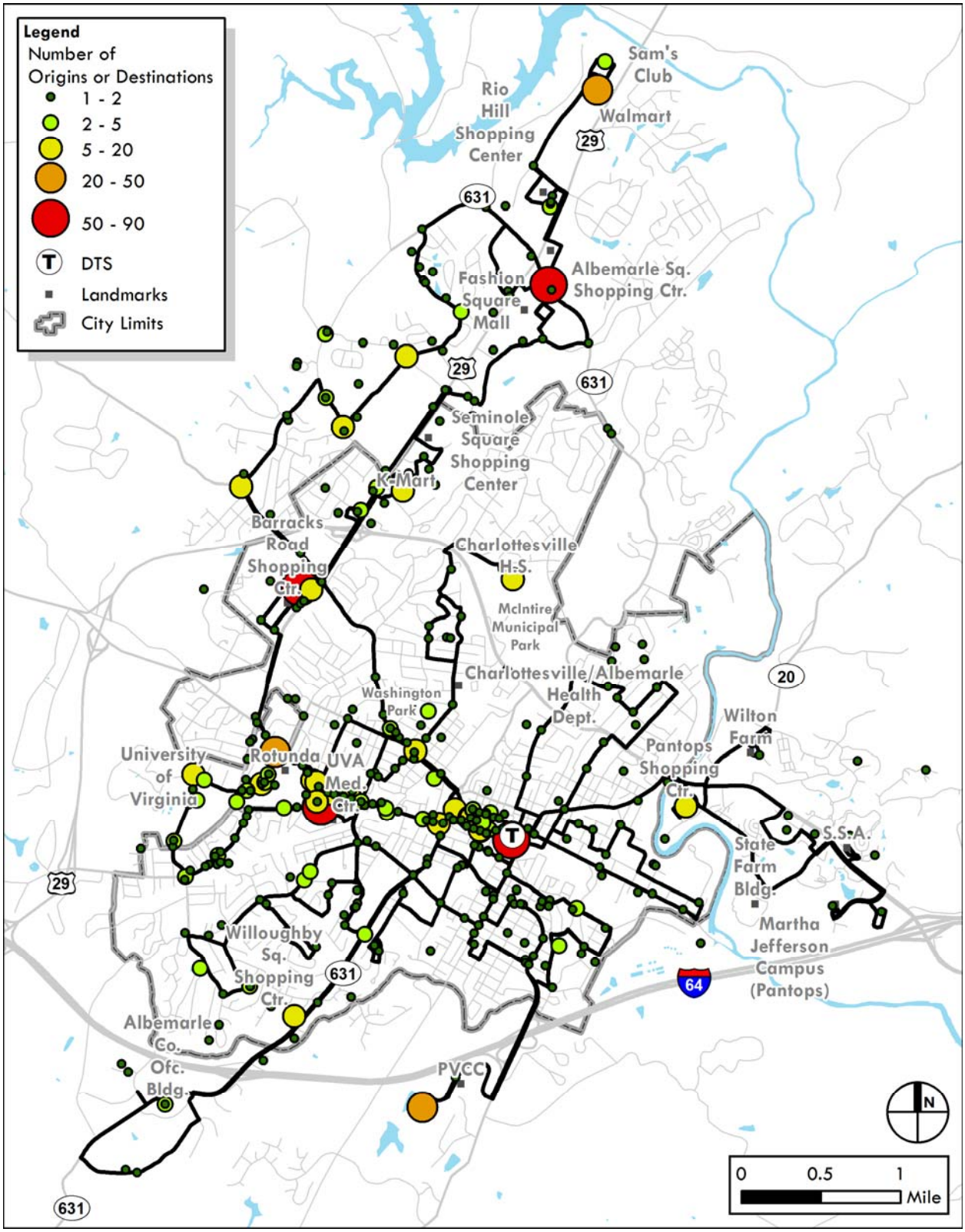


Figure 3-18
Trip Origin & Destination Locations of CAT Survey Responses with Trip Connection Lines

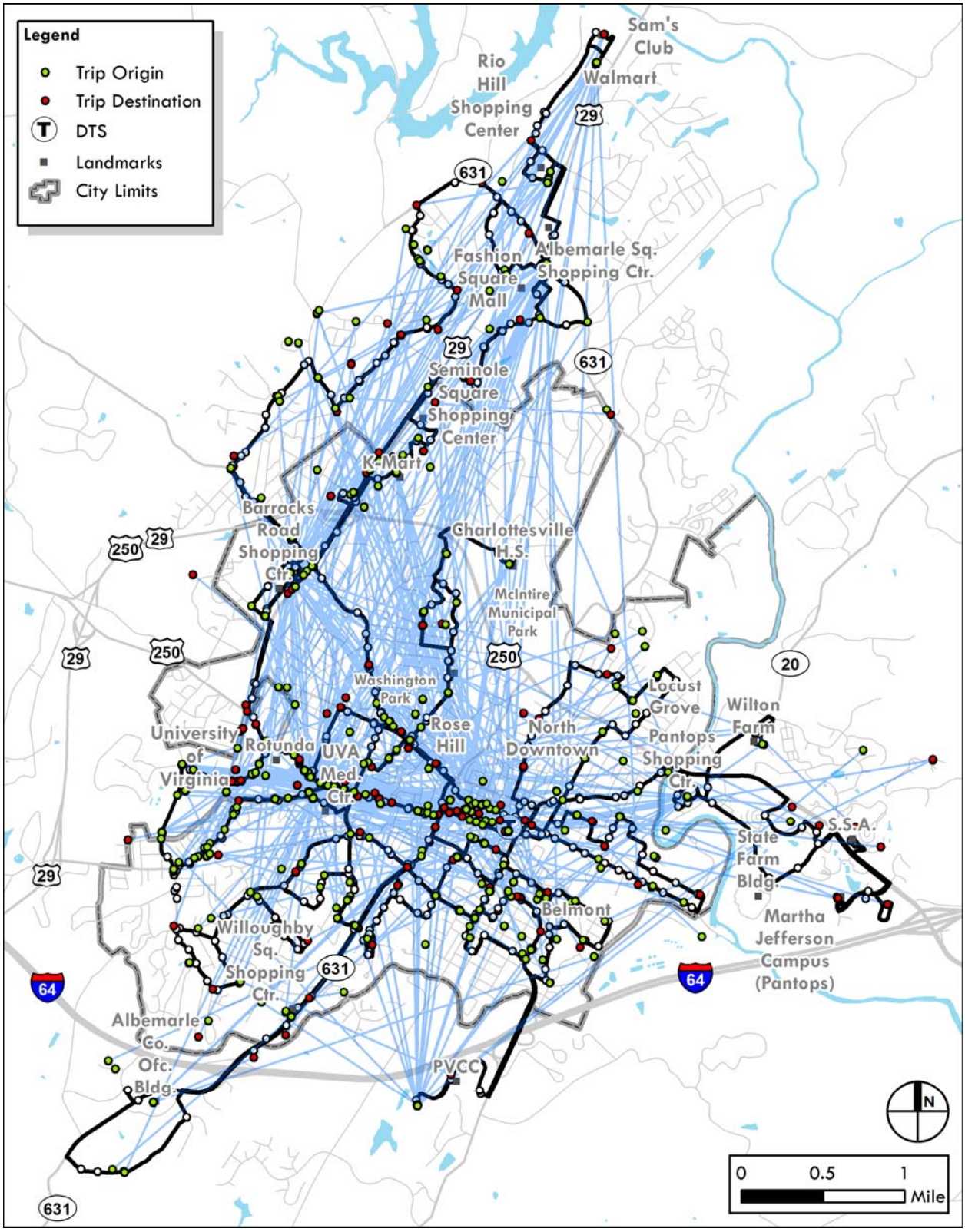
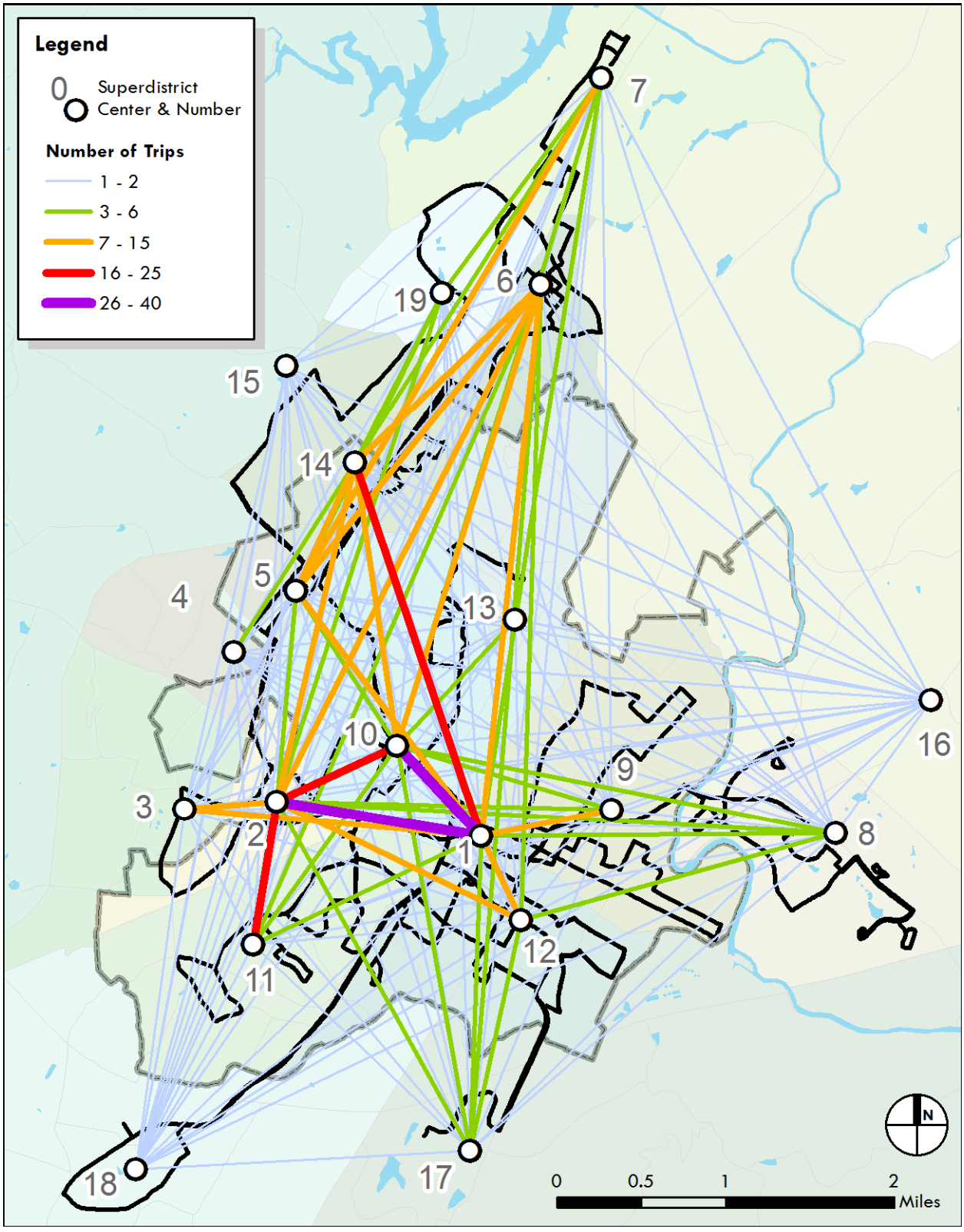


Figure 3-19
Organized CAT Travel Patterns to TAZ Superdistricts Showing Major Movements



3.8 Transit Market Analysis

Demographic data from the Thomas Jefferson Planning District Commission (TJPDC) Traffic Analysis Zone (TAZ) file was also used to determine population and employment growth projections for the City of Charlottesville and Albemarle County for years 2007 and 2025. Those trends are noted below in Table 3-12. As reflected in this table, nominal population growth is expected for Charlottesville while the County has a projected increase in excess of 48 percent. Employment within the City is projected to grow by 12 percent while Albemarle County is expected to have a 47 increase in employment growth.

Table 3-12
Existing and Projected Demographic Characteristics
for the City of Charlottesville

Area	TAZ Population			TAZ Employment		
	2007	2025	Change	2007	2025	Change
Albemarle County	76,186	113,090	48.4%	40,544	59,793	47.5%
Charlottesville	40,933	43,595	6.5%	26,292	29,545	12.4%
Total	**117,119**	**156,685**	**33.8%**	**66,836**	**89,338**	**33.7%**

Population and employment densities were plotted in relation to existing transit routes. Travel patterns were also identified. Existing and projected travel patterns were also determined through use of the TJPDC's regional travel demand model. Data from the U.S. Census Longitudinal and Employer Household Dynamics (LEHD) Program was used to identify commuter travel sheds for various employment centers in the Charlottesville region. Prior work conducted for the Regional Transit Authority (RTA) effort was also reviewed (that project identified transit-supportive corridors). Results from this extensive analysis are presented in the TDP's Technical Memorandum #7. General conclusions regarding potential new transit markets that can be drawn from this work effort are as follows:

City of Charlottesville Service

Neighborhoods within the City of Charlottesville appear to be well-covered with the existing transit network. A large majority of City residents are likely within ¼ mile of a CAT bus route. Potential service needs within the City are more likely related to service frequency improvements, more direct routing to destinations and/or span of service improvements.

Employers within the City of Charlottesville also benefit from the City's existing transit network coverage. However, as shown in this Technical Memorandum, employee travel sheds for major employment centers (such as UVA, downtown Charlottesville and the Barracks Road shopping center) tend to extend well beyond existing CAT transit service coverage. Thus, expanded regional transit service should be considered to address this market (as noted in the following section).

Albemarle County Service

Demographic analyses presented in Technical Memorandum #7 show that significant growth has occurred in Albemarle County over the past several years, and this trend is anticipated to continue. This growth includes population and employment. Much of the population growth in Albemarle County is anticipated to still have work destinations within the City of Charlottesville (such as UVA and downtown Charlottesville). Existing transit service in Albemarle County is generally limited to the US 29 North Corridor, the US 250 East Corridor and the 5th Street Extended Corridor. As development continues in

Albemarle County, demand for new regional transit services (perhaps with supporting park-and-ride lots) to major employment destinations within Charlottesville is likely to increase, and thus should be considered in this project's service planning efforts. There is also the need for expanded local transit services in the higher density areas of Albemarle County (described in the sections below).

US 29 North Corridor

The US 29 Corridor begins in the western portion of the city and extends north into the county near the airport and the Forest Ridge and Hollymead neighborhoods already has a high number of residents and attractions. Employment is anticipated to follow population growth in this corridor. Population is expected to increase in neighborhoods between US 29 and the railroad. The Hollymead Town Center Shopping Center is expected to see a large increase in the number of employees working there. The "Places 29" (May 2008) includes several land use, highway and transit recommendations for this corridor. Transit recommendations include a bus rapid transit (BRT) service to address regional travel needs, with supporting local circulators to address more localized travel needs. Presently, the US 29 Corridor north of Fashion Square Mall is served by one CAT route – Route 5, which operates only to the Wal-Mart at 30-minute frequencies, Monday through Saturday.

US 250 East Corridor

The US 250 East Corridor has also seen rapid population and employment growth. Employment centers include shopping centers (e.g., Pantops Shopping Center), several large office complexes, institutional offices (e.g., Veterans Administration, Social Security Administration) and the State Farm operations center. This fall, Martha Jefferson Hospital will be moving from their current downtown Charlottesville facility to a new hospital complex off of State Farm Blvd. (south of US 250). The opening of this facility is anticipated to further increase development activity in this corridor. Expanded service is needed – both geographic coverage and span of service coverage (i.e., evening and weekend service). The US 250 East Corridor is presently served by one CAT day route – Route 10, which operates at 60-minute frequencies, Monday through Saturday. It is also served on a more geographic-limited basis in the evenings by Route 24, which operates at 60-minute frequencies, Monday through Saturday. The evening Route 24 service only serves Pantops Shopping Center and Wilton Farm.

Avon Street Extended/VA 20 Corridor

The Avon Street Extended/VA 20 area is the third area in Albemarle County that has been identified as an area with increasing population densities. This area includes new subdivisions, Monticello High School and a neighborhood shopping center. Piedmont Virginia Community College (PVCC) is also located in this corridor. Service is currently provided to PVCC six days a week, including evening service. But, there is no service along Avon Street Extended or to Monticello High School. This corridor warrants consideration of expanded local route service.

3.9 City Comprehensive Plan

The City's Comprehensive Plan was reviewed to determine the desired direction of future growth in the City and how that might affect existing transit services. The Comprehensive Plan was first completed in 2001 and updated in 2007 after a series of 18 community plan updates that included every neighborhood in Charlottesville. The Comprehensive Plan notes the City's high quality of life and desirability due to landscape and environmental, historic, cultural, and intellectual characteristics. Further, the plan stated goals of continuing a policy of preserving this high quality of life by furthering it with coordinated planning using a variety of guiding principles, and because of the update, includes a

separate section focusing solely on transportation issues. Information provided in the Comprehensive Plan that is directly relevant to this TDP effort is as follows:

Demographics

The City's Comprehensive Plan notes that Charlottesville's population has remained relatively stable around 40,000 since the 1970s due partly due to fixed boundaries. The County, in comparison, has increased almost 140% between 1970 and 2005 and the Commonwealth by over 60%. It is expected Charlottesville will continue to have a relatively stable population for the next 25 years though increasing densities near UVA and in downtown will help to increase population levels slightly. Albemarle County, however, is expected to gain about 25,000 more residents.

The plan also noted the young median age of Charlottesville. Median age for City residents in 2000 was 25.6, almost a full decade younger than the median age of Virginia and almost 12 years younger than the County's median age. More than 36% of City residents are between 15 and 24 years of age. Racial composition was reported from the 2000 Census when 70% of City residents were white, 22% African American, 5% Asian and the remaining 3% reporting other. This represents a decreasing proportion of whites and an increasing percentage of other racial and ethnic population groups adding to the diversity of Charlottesville.

Other key demographic characteristics noted in the City's Comprehensive Plan are as follows:

- Charlottesville has gained educational attainment: those 25 and older with a higher-education degree increased from 34% in 1990 to 41% in 2000 and those without high school diplomas or equivalents decreased from 24.5% to 19.2% during the same period.
- Married couples comprised 30% of households in the City compared with 53% in the Commonwealth and an even greater share in the County. Non-family households account for the largest share in the City due to the high number of students.
- The cost of living index for the City in 2000 ranked Charlottesville as having a 10% higher index (110.7) than the national composite of 100 and nearby cities such as Harrisonburg and Waynesboro, though was less than that of cities to which Charlottesville is frequently compared.
- Poverty characteristics (household income, food stamp use, free lunch use, etc.) have increased over time possibly due to higher access to services within the City compared to the County.
- Neighborhood concerns included land use/zoning issues, increasing cut-through traffic, lack of affordable housing, a need for greater network connectivity, need for more service areas and hours from CAT, and a need for more sidewalks, trails and parkland.

Land Use

While covering a variety of issues such as historic and neighborhood preservation, zoning and incorporating an increasing use of mixed uses, the plan noted the significance of land use as it relates to transportation, and vice versa. The plan recommended further support of land use changes to support transit use, a decrease in parking in some areas, such as downtown and "The Corner" where access is sometimes difficult. The City recently lowered minimum parking requirements required of new developments to increase density and alternative mode usage. However, by removing parking requirements, it is imperative the City simultaneously supports the availability of other modes.

The plan identified the City's current breakdown of land uses in 2006:

- Residential – 54%
- Commercial and Office – 13%
- Industrial – 3%
- Institutional (Schools, Parks, Other) – 18%
- Public – 6%
- Vacant – 12%

Figure 3-20 presents the City's Existing Land Use Map and Figure 3-21 presents the City's Future Land Use Map from its current Comprehensive Plan.

Transportation

The Comprehensive Plan notes that Charlottesville's location within the County contributes to the transportation challenges in the area. Transportation and land use both within the City and County affect travel patterns across the area. Further, the plan noted US 29 and US 250 are heavily congested corridors. Nearly all of the City's arterials see congestion during peak periods with concern for Emmet Street, Avon Street, and the US 250 bypass. The stated goals of the Comprehensive Plan were to decrease single occupancy commuter traffic by 10%, increase travel options, and enhance quality of life. The Comprehensive Plan reviewed major studies in the area and makes note of a number of recommendations within each.

3.10 Other Relevant Plans/Studies

Other studies and plans relevant to this TDP effort are as follows:

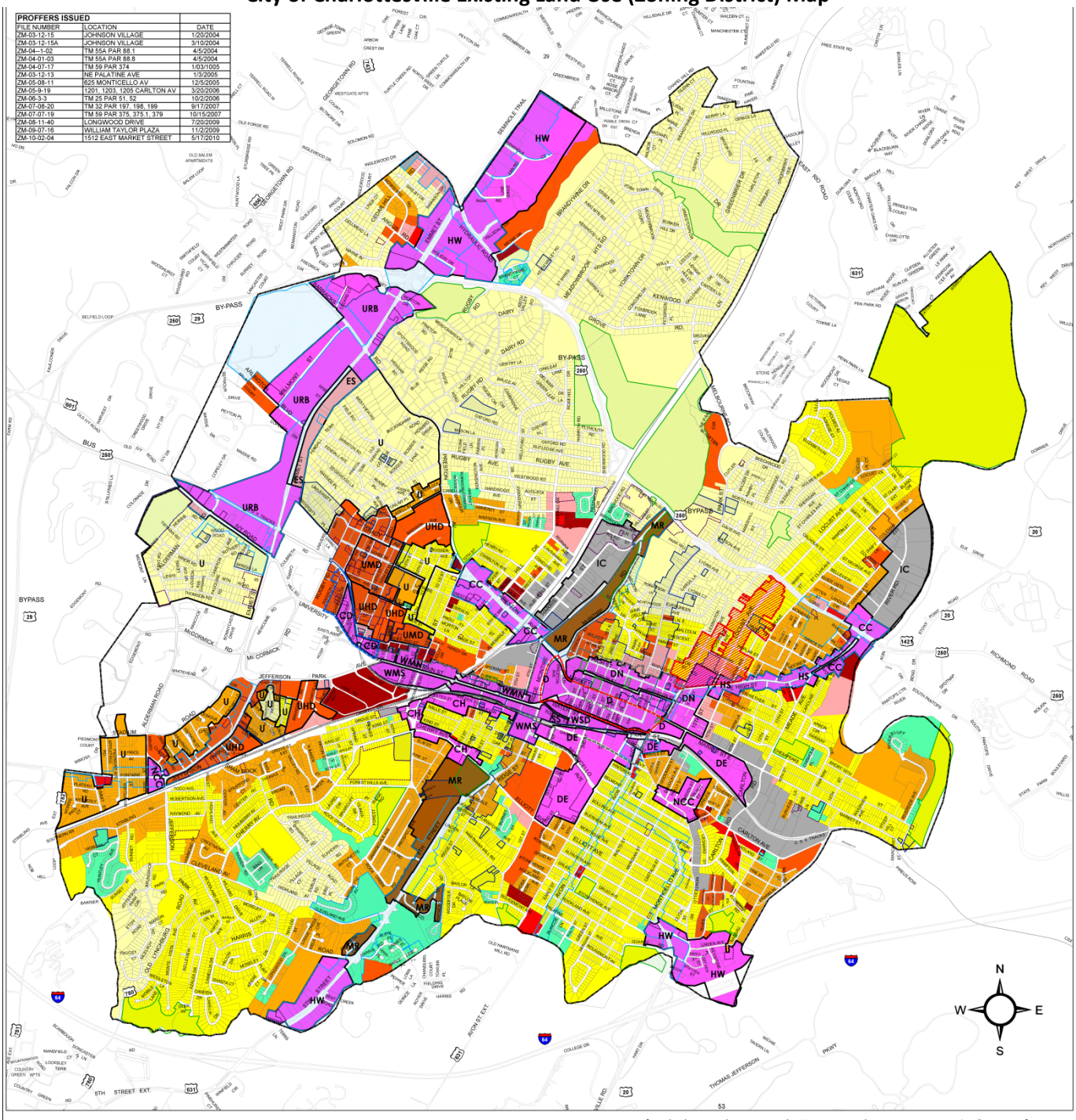
UnJAM 2025. The United Jefferson Area Mobility Plan 2025 combined the Charlottesville-Albemarle Regional Transportation (CHART) Plan with the Rural Area Transportation Long Range Plan to identify combined, regional, and multi-modal approaches to improving regional transportation planning in the region. Further, the study noted the role of US 29 as a congested major thoroughfare needing improvements in capacity and connectivity. This was updated in 2009 with the UnJAM 2035 Plan.

Regional Rail Conceptual Study. Public input during the CHART process indicated interest in regional rail mobility. A conceptual study from 2004 examined light rail and commuter rail options north-south and east-west of the city. Stops would include UVA, downtown, and locations along US 29. Streetcar implementation along West Main was also noted as being important.

Places 29 Corridor Transportation Study. The objective of the US 29 North Corridor Transportation study was to develop a transportation plan for the US 29 corridor from the Route 250 Bypass to the Greene County boundary. This study was completed in conjunction with Albemarle County. The intent of this study was to incorporate the Places 29 Master Plan into the County's Comprehensive Plan.

US 29 North Transportation Corridor Study. This study is a component of the Places 29 Study conducted by Albemarle County, both examining the corridor of US 29 between the US 250 Bypass and the Greene County boundary. The goal is to guide investment by integrating land use planning and route connectivity in the corridor.

Figure 3-20
City of Charlottesville Existing Land Use (Zoning District) Map



0 350700 1,400 2,100 2,800 3,500 4,200
Feet

Special Use Permits are identified on the map for general reference only. Refer to the original SUP file for further information.

Neighborhood Development Services
Approved April 6, 2009

AMENDMENT DATES
July 22, 2009
October 1, 2009
November 10, 2009
November 19, 2009
October 29, 2010
November 15, 2010

RESIDENTIAL
- R-1
- U R-1U
- R-1S
- U R-1SU
- R-2
- U R-2U
- R-3
- UMD University Medium Density
- UHD University High Density
- MR McIntire-5th Residential
- Planned Unit Development

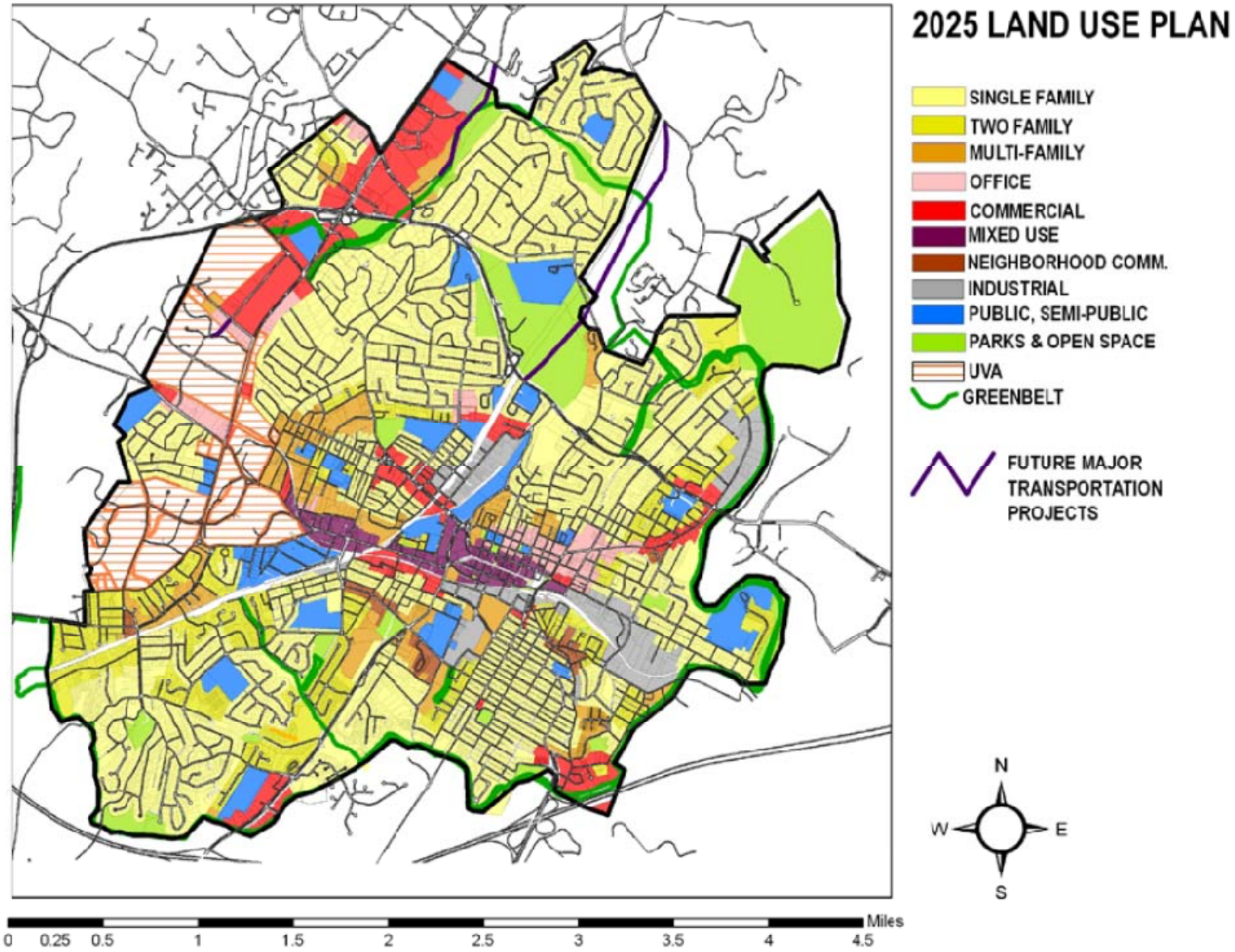
COMMERCIAL
- B-1
- B-2
- B-3
- ES Emmet Street Commercial

OVERLAY DISTRICTS
- Public Park Protection
- Architectural Design Control Districts and Individually Protected Properties
- Historic Conservation District
- Entrance Corridors
- Corner Parking Zone
- Parking Modified Zone
- Urban Corridor Parking Zone
- Special Use Permits

MIXED USE
- D Downtown Corridor
- DE Downtown Extended Corridor
- DN Downtown North Corridor
- WMN West Main North Corridor
- WMS West Main South Corridor
- CC Central City Corridor
- URB Urban Corridor
- HS High Street Corridor
- HW Highway Corridor
- NCC Neighborhood Commercial Corridor
- CH Cherry Avenue Corridor
- SS South Street District Corridor
- CD The Corner District Corridor
- WSD Water Street District Corridor

INDUSTRIAL
- M-I
- IC Industrial Corridor

Figure 3-21
City of Charlottesville Future Land Use Map



29H250 Phase 2 Plan. This plan builds upon the work of the 29H250 Intersections Study in 2003. The goals of Phase 2 was to examine multi-modal, context-sensitive approaches to improving access, connectivity and design for the Hydraulic Road, US 29 and US 250 areas.

Shaping Community With Transit. The report, conducted in 2005, argued for implementation of a modern streetcar line on West Main due to increased vehicle congestion, decreased levels of parking and a desire to improve corridor development and build upon the successes of the downtown mall. At the time of the Comprehensive Plan's writing in late 2006, a Streetcar Task Force had been formed by City Council to identify the feasibility of carrying out the goals and objectives of this report.

Jefferson Area Bicycle, Pedestrian and Greenways Plan. This report aimed to increase the awareness and use of bicycle and pedestrian facilities in the area. A regional plan was created in a way that local areas could easily implement recommendations into their own plans and facility recommendations were aligned with existing facility planning.

Albemarle County Comprehensive Plan. The current County Comprehensive Plan recommends increasing multi-modal connectivity across the region with new networks through new neighborhoods; increasing localized, centralized density to increase a mix of uses in more urban and less suburban settings; and increase the number of transportation options available to people.

Charlottesville Transit Improvement Study (TIS) and Transit Development Plan. The TIS was completed in 2005 and offered recommendations for how CAT could be structured or absorbed into a regional transit authority. The TIS examined ridership data and an on-board survey was conducted. The result was a finding that a majority of CAT riders were transit-dependent. A third of riders during that time were UVA affiliates. Implementation of TDP recommendations occurred in conjunction with the DTS opening downtown. Increased service to parts of the County and UVA affiliates riding fare-free were included in these recommendations.

Charlottesville Bicycle and Pedestrian Facilities Master Plan. This plan dates from 2001 and stems from a desire of the City to become more amenable to bicycle and pedestrian facilities. The goal is to have a comprehensive network of bicycle and pedestrian facilities across the area. Due to challenges, feasible projects were organized into major on-street and major off-street goals.

US Bike Route 76, part of a network that traverses from Illinois to the Eastern Seaboard, passes through and Charlottesville from Waynesboro to near Ashland. The City of Charlottesville, Albemarle County and the TJPDC have recently finished identifying a conceptual bicycle and pedestrian trail that begins at the Downtown Pedestrian Mall and ends in northern Albemarle County. Figure 3-22 shows this conceptual Northtown Trail. Figure 3-23 shows the City's bikeways and Figure 3-24 shows the City's 2006 Bicycle and Pedestrian Master Plan which was included in the Master Plan. The existing and future bikeways shown in these figures can be integral in expanding Charlottesville's transit market.

Figure 3-22
Northtown Bicycle and Pedestrian Trail

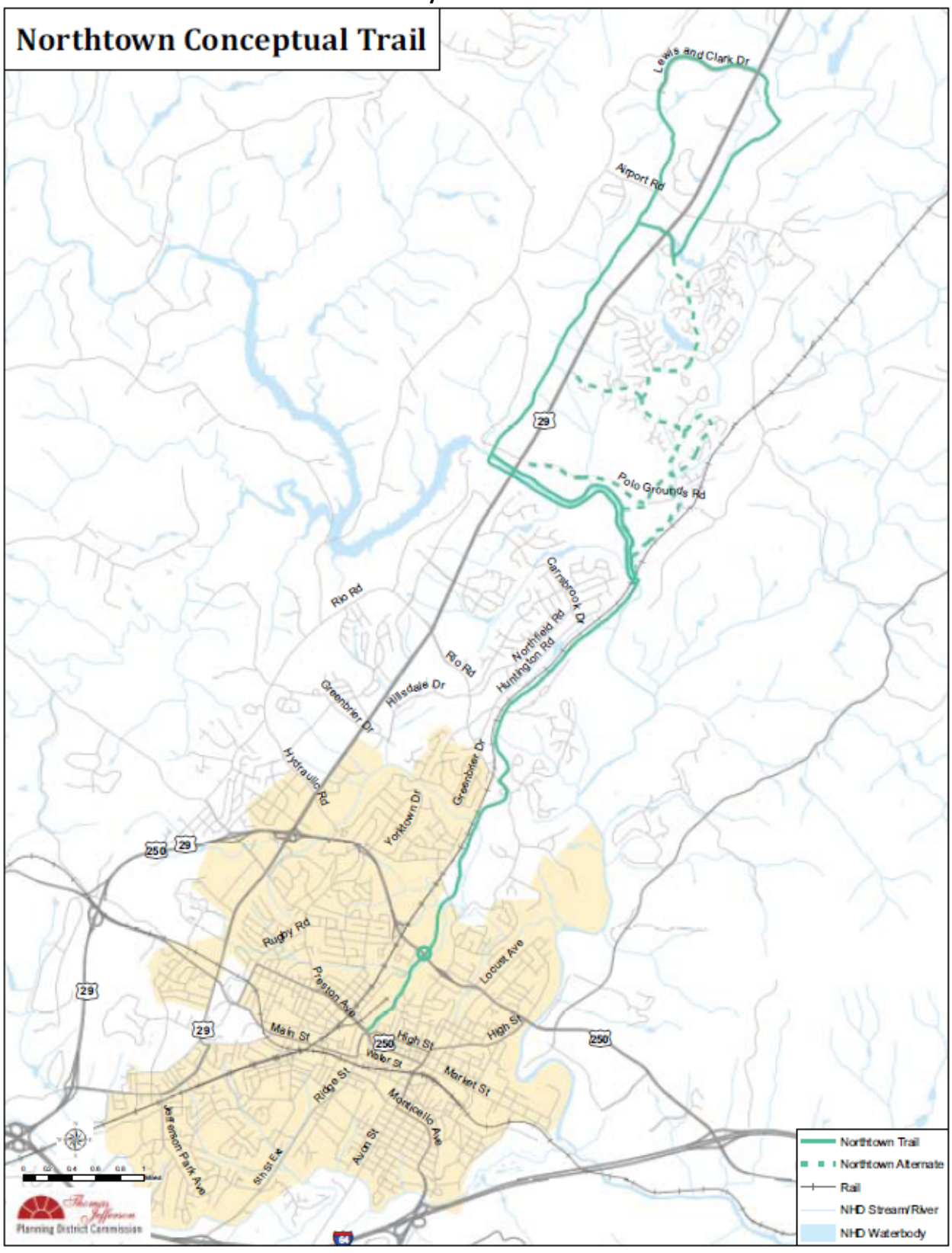


Figure 3-23
City of Charlottesville Existing Bikeway System

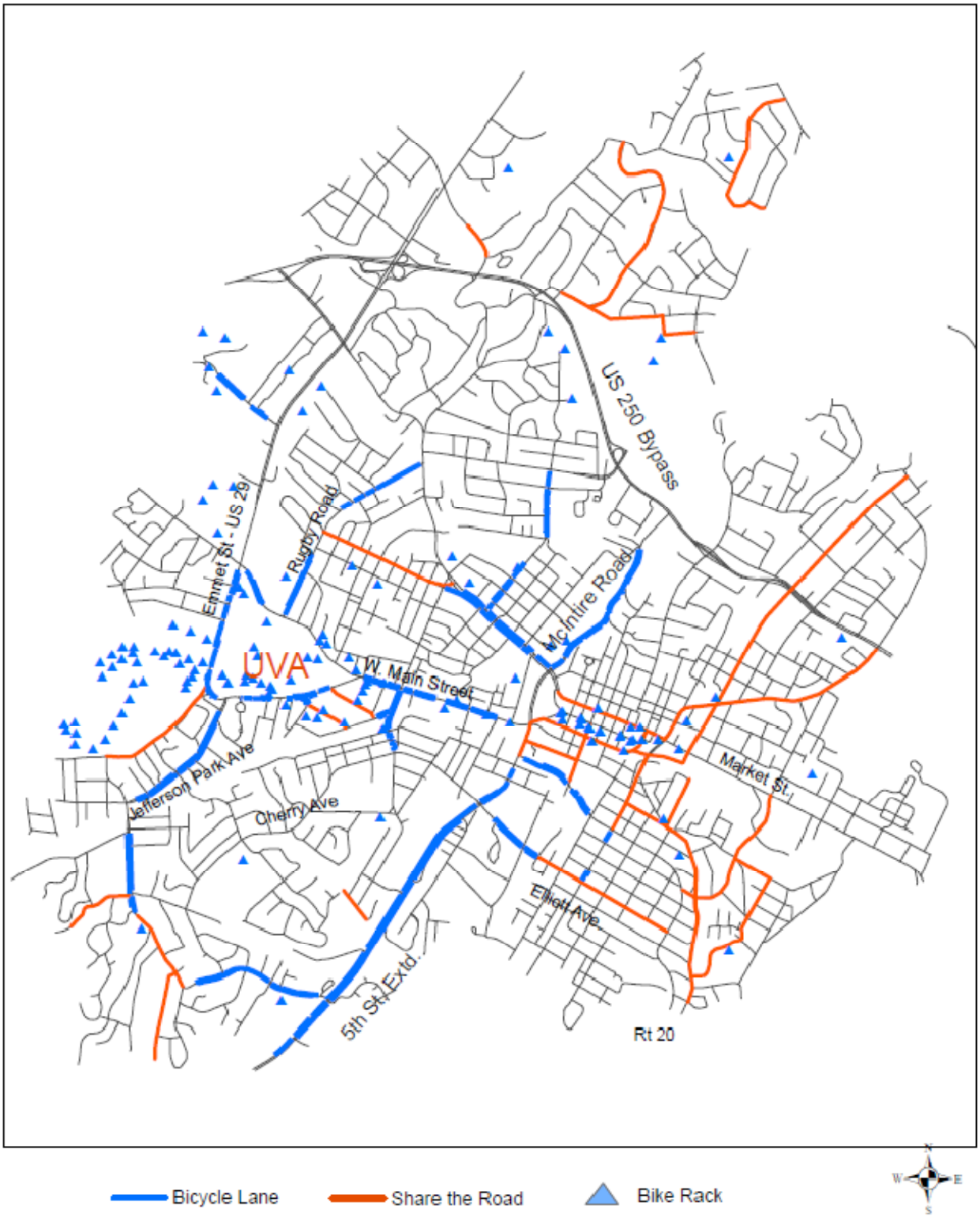
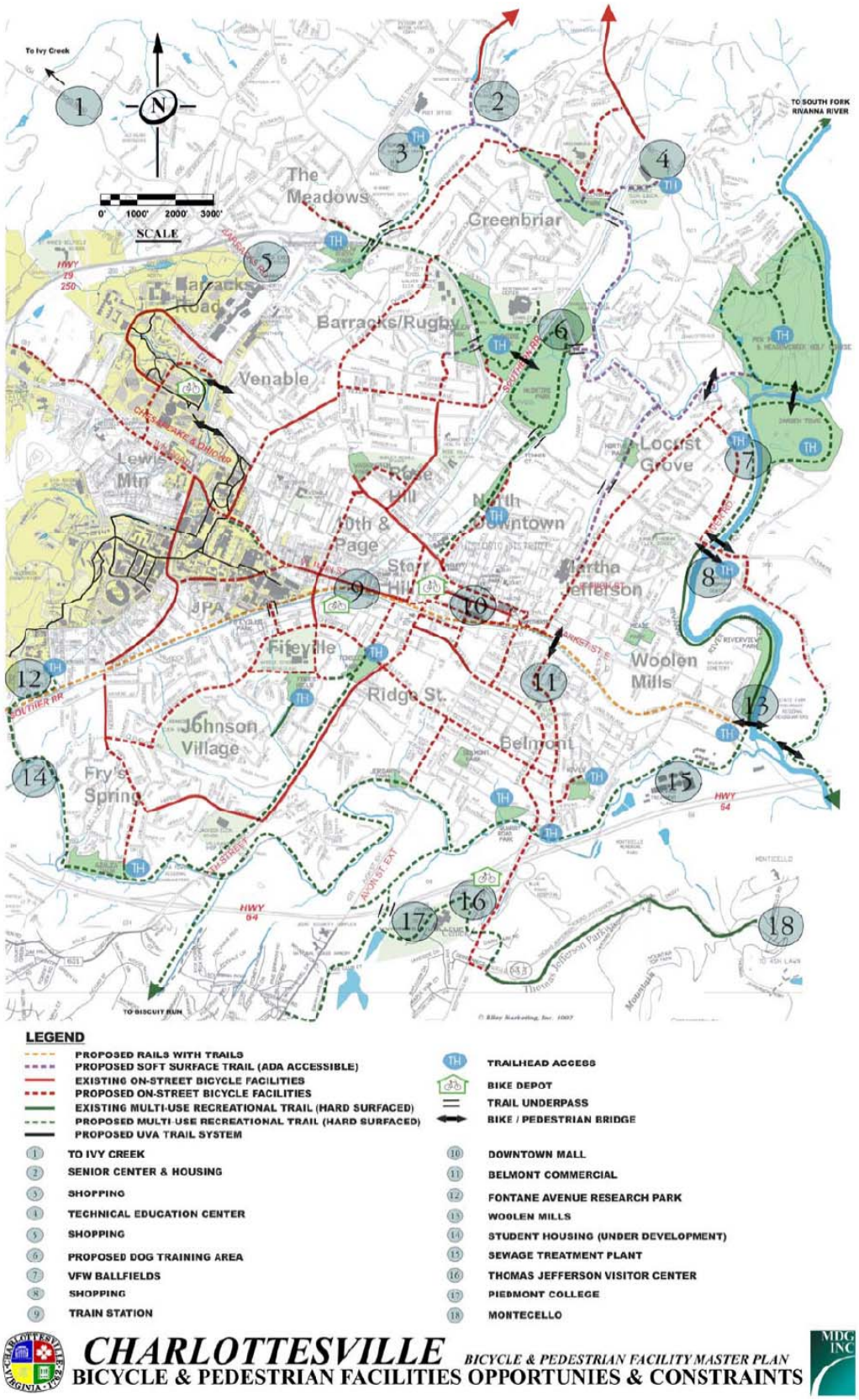


Figure 3-24
City of Charlottesville Bicycle and Pedestrian Facility Master Plan



LEGEND

- PROPOSED RAILS WITH TRAILS
- PROPOSED SOFT SURFACE TRAIL (ADA ACCESSIBLE)
- EXISTING ON-STREET BICYCLE FACILITIES
- PROPOSED ON-STREET BICYCLE FACILITIES
- EXISTING MULTI-USE RECREATIONAL TRAIL (HARD SURFACED)
- PROPOSED MULTI-USE RECREATIONAL TRAIL (HARD SURFACED)
- PROPOSED UVA TRAIL SYSTEM
- TRAILHEAD ACCESS
- BIKE DEPOT
- TRAIL UNDERPASS
- BIKE / PEDESTRIAN BRIDGE

1. TO IVY CREEK
2. SENIOR CENTER & HOUSING
3. SHOPPING
4. TECHNICAL EDUCATION CENTER
5. SHOPPING
6. PROPOSED DOG TRAINING AREA
7. VFW BALLFIELDS
8. SHOPPING
9. TRAIN STATION
10. DOWNTOWN MALL
11. BELMONT COMMERCIAL
12. FONTANE AVENUE RESEARCH PARK
13. WOOLEN MILLS
14. STUDENT HOUSING (UNDER DEVELOPMENT)
15. SEWAGE TREATMENT PLANT
16. THOMAS JEFFERSON VISITOR CENTER
17. PIEDMONT COLLEGE
18. MONTECELLO

CHARLOTTESVILLE *BICYCLE & PEDESTRIAN FACILITY MASTER PLAN*
BICYCLE & PEDESTRIAN FACILITIES OPPORTUNIES & CONSTRAINTS

City of Charlottesville Parking Master Plan The goal of this plan was to develop solutions to a lack of parking and identify strategies for guiding future planning for parking. Three areas were studied in detail: Court Square, Main Downtown and West of Downtown. Fifteen recommendations were created and most have been implemented since the report was published in 2000.

Charlottesville-Albemarle County Regional Transit Authority Plan. In August 2006, the City of Charlottesville and County of Albemarle both signed Resolutions of Intent to establish a Regional Transit Authority (RTA) to serve the Charlottesville-Albemarle area. The development of the RTA was intended to:

- Develop a seamless regional transit
- Potentially develop dedicated funding sources
- Provide for more effective regional transit planning
- Provide for more efficient coordination and integration of transit services
- More effectively address regional congestion and air quality issues
- More effectively integrate transit and land use

A detailed plan was assembled in 2008 that identifies various strategies for advancing an RTA. Several Technical Memorandums were produced that addressed the following issues:

- Regional Transit Management and Governance
- Labor Analysis and Staffing Plan
- Transit Supportive Corridors and Areas
- Service Strategies
- Service Standards
- Prior Investment in Charlottesville Transit System
- Transit Authority Service Strategy & Operating Costs, Vehicle, facility & Equipment Needs
- Existing and Potential New Funding Sources
- Regional Cost Allocation Options
- Plans for Transition to a RTA and Implementation Schedule
- In-Kind Record Keeping

The Albemarle County Board of Supervisors and the Charlottesville City Council received enabling legislation authorizing the formation of an RTA from the General Assembly during the 2009 session. This legislation does not form the Authority, but grants the City and the County permission to form the Authority when deemed appropriate by both bodies. A second piece of legislation that would have granted enabling authority for the County and City to ask voters if they would approve of an increase to the local sales tax by up to one-cent in each locality did not pass. Revenues that might be generated by the tax would be used to fund the operations of the new RTA and remaining funds would be used for other priority transportation projects.

3.11 TDP Public Outreach Efforts

There have been extensive public outreach efforts during the development of this TDP. Those efforts have included:

- Individual interviews with CAT Transit staff during the weeks of September 20th and October 4th, 2010

- Small group format interviews with CAT bus operators and supervisors October 6th and 8th, 2010.
- Interviews with 13 stakeholders, including City staff and Council members, Albemarle County staff and Board of Supervisors, UVA staff, JAUNT staff, and community leaders.
- Two public meetings held during the first week of November, 2010. These meetings were advertised in three newspapers and on flyers in many CAT buses the previous week.

Input from these efforts has been used in the development of service recommendations (described in Chapter 4). Specific input and comments are noted in *Technical Memorandum #1: Documentation of Staff Input* and *Technical Memorandum #2: Documentation of Stakeholder Input and Public Outreach*.

In addition to the efforts described above, this TDP process was guided by a Project Advisory Committee. Members of this committee met several times to review TDP work products and offer comments and suggestions. Advisory Committee members were:

- Jeanie Alexander, Charlottesville Traffic Engineering
- David Benish, Albemarle County Planning
- Will Cockrell, Thomas Jefferson Planning District Commission
- Chad Freckman, Charlottesville Citizen
- Len Schoppa, Alliance for Community Choice in Transportation
- Juandiego Wade, Charlottesville City School Board
- Becca White, University of Virginia Parking & Transportation

3.12 Title VI and Triennial Review

Title VI

Title VI of the 1964 Civil Rights Act prohibits discrimination on a number of grounds in programs and activities receiving federal funds. Therefore, transit agencies must not discriminate for any reason to remain eligible for funding from FTA. The City of Charlottesville, and Charlottesville Area Transit (CAT) by extension, ensures all its employees, and vendors and subcontractors who directly receive funding from CAT are accountable to Title VI. The City of Charlottesville has a Title VI coordinator who is in charge of keeping records, facilitating complaint procedures which also go through CAT, and a customer and employee outreach program. Further, the Statement of Rights and City Title VI contact information is displayed in the Rider's Guide, CAT's publicly-available bus route map and schedule handbook.

CAT coordinated several public outreach meetings between 2007 and 2010 to raise public awareness of Title VI issues.

- Coordinated Pubic Transit-Human Services Transportation Plan ("Coordinated Plan" includes Elderly and Individuals with Disabilities Program (Section 5310), Job Access and Reverse Commute Program (Section 5316), and New Freedom Program (Section 5317))
- Transit Improvement Plan (TIP)
- Board Meetings
- Public meetings prior to new service changes
- Thirty-day public notice/public comment period prior to VDRPT funding assistance application

The City of Charlottesville completed its last Title VI plan in September 20, 2010.

Triennial Review

The FTA requires transit agencies receiving Urbanized Area Formula Grant funding to undergo a performance evaluation, known as a Triennial Review, at least every three years. Twenty-three areas of evaluation are examined to determine how the transit agency is performing. Any area found to be unsatisfactory is marked as deficient until remedial activities are performed to correct any problems.

CAT's last triennial review was initiated February 11, 2009 in the Region III Office. That office notified CAT of a site visit that occurred June 16 through 17, 2009. Documents were reviewed and sites were toured during this time.

Of twenty-three areas, deficiencies were found in only two areas: Satisfactory Continuing Control and Procurement. CAT was asked to reconcile its April 2009 inventory to correct the Satisfactory Continuing Control deficiency and was able to do so. A review revealed that FTA clauses were not included in CAT's GFI Genfare sole source and Gropen Design and Printing construction contract procurement files. CAT has since corrected the deficiency in the area of procurement.

4.0 TRANSIT SERVICE AND FACILITY NEEDS ASSESSMENT

This chapter identifies potential transit service and facility needs for Charlottesville Area Transit (CAT). Typically, service and facility / equipment needs are identified based on the evaluation conducted in previous chapters of the TDP, stakeholder meetings and demographic analysis. As previously noted, CAT has taken this opportunity to complete a more extensive evaluation of existing service characteristics and service/facility needs than what is normally required to meet DRPT TDP requirements. Longer-range (2035) service recommendations have also been identified as part of this TDP process.

4.1 General Service Needs Assessment

General conclusions regarding service needs that were identified from this project's latent demand analysis and noted earlier in Chapter 3, are as follows:

City of Charlottesville Service

Potential service needs within the City were determined to be more likely related to service frequency improvements, more direct routing to destinations and/or span of service improvements. It was noted that employee travel sheds for major employment centers (such as UVA, downtown Charlottesville and the Barracks Road shopping center) tend to extend will beyond existing CAT transit service coverage. Thus, expanded regional transit service should be considered to address this market (as noted in the following paragraph).

Albemarle County Service

Demographic analyses has shown that significant growth has occurred in Albemarle County over the past several years, and this trend is anticipated to continue. This growth includes population and employment. Much of the population growth in Albemarle County is anticipated to still have work destinations within the City of Charlottesville (such as UVA and downtown Charlottesville). Existing transit service in Albemarle County is generally limited to the US 29 North Corridor, the US 250 East Corridor and the 5th Street Extended Corridor. As development continues in Albemarle County, demand for new regional transit services (perhaps with supporting park-and-ride lots) to major employment destinations within Charlottesville is likely to increase, and thus should be considered in this project's service planning efforts. There is also the need for expanded local transit services in the higher density areas of Albemarle County (described in the paragraphs below).

US 29 North Corridor

The US 29 Corridor begins in the western portion of the city and extends north into the county near the Charlottesville Albemarle airport. The Forest Ridge and Hollymead neighborhoods already have a high number of residents and attractions. Population is expected to increase in neighborhoods between US 29 and the railroad. Employment is also anticipated to grow significantly in this corridor. The Hollymead Town Center Shopping Center is expected to see a large increase in the number of employees working there. The "Places 29" (May 2008) includes several land use, highway and transit recommendations for this corridor. Transit recommendations include a bus rapid transit (BRT) service to address regional travel needs, with supporting local circulators to address more localized travel needs. Presently, the US 29 Corridor north of Fashion Square Mall is served by one CAT route – Route 5, which operates only to the Wal-Mart at 30-minute frequencies, Monday through Saturday.

US 250 East Corridor

The US 250 East Corridor has also seen rapid population and employment growth. Employment centers include shopping centers (e.g., Pantops Shopping Center), several large office complexes, institutional offices (e.g., Veterans Administration, Social Security Administration) and the State Farm operations center. This fall, Martha Jefferson Hospital will be moving from their current downtown Charlottesville facility to a new hospital complex off of State Farm Blvd. (south of US 250). The opening of this facility is anticipated to further increase development activity in this corridor. Expanded service is needed – both geographic coverage and span of service coverage (i.e., evening and weekend service). The US 250 East Corridor is presently served by one CAT day route – Route 10, which operates at 60-minute frequencies, Monday through Saturday. It is also served on a more geographic-limited basis in the evenings by Route 24, which operates at 60-minute frequencies, Monday through Saturday. The evening Route 24 service only serves as far east as Pantops Shopping Center and Wilton Farm.

Avon Street Extended/VA 20 Corridor

The Avon Street Extended/VA 20 area is the third area in Albemarle County that has been identified as an area with increasing population densities. This area includes new subdivisions, Monticello High School and a neighborhood shopping center. Piedmont Virginia Community College (PVCC) is also located in this corridor. Service is currently provided to PVCC six days a week, including evening service. But, there is no service along Avon Street Extended or to Monticello High School. This corridor warrants consideration of expanded local route service.

Other operations-related needs identified through this TDP process include:

- ***One-Direction Loops***. There are several CAT routes that operate with large one-direction loops. One-direction loops are an effective way to increase transit's geographic coverage. But, it does result in increased transit travel times for the customer for one segment of their trip (e.g., their morning trip may be short, but their afternoon return trip may be much longer because they must ride around the loop to reach their destination). Route alignment modifications are recommended to reduce the number of one-direction loops.
- ***On-Time Performance Challenges.*** This TDP evaluation has identified a few routes that experience on-time performance challenges. In particular, Route 10 has a high number of trips that operate behind schedule because of varying traffic conditions on U.S. 250. Route 7 also has on-time performance issues in the morning when the route operates with just four buses (six buses are currently used on Route 7 in the midday and afternoon time periods, to account for increasing traffic congestion).
- ***Different Route Nomenclature in the Evenings.*** CAT uses a different route numbering system in the evenings for select routes that can create customer confusion. For example Route 3 in the daytime becomes Route 21 in the evening. Segments of daytime Routes 4 and 6 are merged into a new Route 22 in the evening. Consistent route nomenclature (and routing) would ease customer understanding of the CAT system.

4.2 RTA Plan Service Recommendations

As noted earlier in Chapter 3 of this TDP, in 2008, significant transit service planning work went into the study of potentially creating a RTA in the Charlottesville area. That study identified several specific service improvements that would address the transit needs identified above. The highest investment

service strategy that was considered in the RTA work was Scenario 4A, and included the following improvements:

- Increased service frequencies on all existing City routes to 15-minutes in the peak periods and 30-minutes in the midday.
- A Hollymead route that would operate between Hollymead Town Center and Barracks Road at 30-minute all-day frequencies
- A Rio Road East route that would operate between Fashion Square Mall and Rio Road East at 15-minutes in the peak periods and 30-minutes in the midday.
- A Biscuit Run route that would run between the previously proposed Biscuit Run development and Barracks Road Shopping Center. This route would operate at 15-minute all-day frequencies.
- A Highway 29 circulator that would serve the US 29 commercial corridor and operate at 15-minute peak and 30-minute midday frequencies.
- A Highway 250 Crosstown route that would connect Barracks Road Shopping Center and the Pantops area and operate at 15-minutes peak and 30-minutes midday frequencies.
- A Pantops to Hollymead route that would operate at 30-minute all-day frequencies.
- Two "high frequency" routes that would operate in the West Main/Emmett Street/US 29 corridors. One route would operate from downtown to Fashion Square at 20-minute frequencies, and the other route would operate from downtown to Hollymead at 20-minute frequencies, thus resulting in a combined 10-minute frequency between downtown and Fashion Square. This service was identified as possibly being bus rapid transit (BRT).
- Two commuter routes that would serve the University of Virginia from Piney Mount and east of Rivanna, operating with 2 morning and two afternoon trips each.

4.3 TDP-Recommended Service Needs

As noted earlier, the service evaluation that was completed for this TDP was more extensive than what is normally required to meet DRPT's TDP requirements. This extensive evaluation has allowed CAT to determine service needs in a more complete manner than what was possible in the prior RTA work. Specific service needs identified in this TDP process address the general needs identified in Section 4.1, and are generally consistent with those identified in the prior RTA work (Section 4.2), but are refined to address the most immediate needs. Service needs for the Near-Term (1-3 years), Short-Range (4-6 years) and Long-Range (2035) time periods are described in detail in *Technical Memorandum 8 – Service Plan Recommendations.*

Six-Year Service Needs

Transit service needs identified as most pressing for the TDP's six-year time period are as follows:

Free Trolley

- Decreased evening and Saturday morning frequency on the Free Trolley to better match customer demand

Route 1

- Renumbering of Route 1B to Route 1 and changing the approach to PVCC via Avon Street, Mill Creek Drive and VA 20
- Continuation of evening service via the same daytime route alignment, with route renumbered from Route 23 to Route 1

Route 2

- Renumbering of Route 2B to Route 2 and route modifications to provide bi-directional service along the Albemarle County segments of the service

Route 3

- Modifications to Route 3 to assume productive stop segments along Monticello Avenue currently served by Route 1B
- Improved midday frequency on Route 3, Monday-Friday, and 30-minute all-day service on Saturdays
- Reduction in evening service levels, with route renumbered from Route 21 to Route 3

Route 4

- Initial streamlining of Route 4 to provide bi-directional corridor service along Cherry Avenue
- Eventual extension of Route 4 to provide connectivity between South Charlottesville, UVA and Barracks Road Shopping Center
- Evening service with a route alignment that is consistent with daytime routing, and with evening route labeled as Route 4

Route 5

- Initial route modifications to Route 5 to provide bi-directional travel along Rio Road
- Eventual splitting of Route 5 into a 5A and 5B. Route 5A would maintain existing service between Barracks Road and Fashion Square Mall. Route 5B would reflect extended service from Fashion Square Mall to Hollymead. Both routes would also operate in the evenings

Route 6

- Modifications to Route 6 to assume the Forest Hills neighborhood currently served by Route 4, new service to Brookwood and bi-directional service throughout the core of the route
- Evening service with a route alignment that is consistent with daytime routing, and with evening route labeled as Route 6

Route 7

- Initial adjustments to Route 7's morning running times to improve on-time performance plus adjustments to inbound routing to mimic the Free Trolley
- Eventual split of Route 7 into 7A and 7B route patterns, with 7A operating on the proposed Hillsdale Drive extension, and 7B operating on Seminole Trail, with both route patterns ending at Fashion Square Mall. Only Route 7A would operate in the evenings

Route 8

- Extension of Route 8 to the proposed Albemarle Place development (west of Seminole trail at Hydraulic Road) with circulation into the Meadows community

Route 9

- Modifications to Route 9's inbound routing to maintain bi-directional service along 10th Street;
- Eventual modification of Route 9 to serve the proposed new YMCA at McIntire Park

Route 10

- Creation of new Route 10 by combining streamlined segments of Route 1A with northernmost segments of Route 10
- Evening service along the new Route 10 alignment to Martha Jefferson Hospital campus

Route 12

- Creation of new Route 10B by combining streamlined segments of Route 2A with the southernmost segments of Route 10

Table 4-1 presents a summary of identified service needs during the TDP's six-year time period and anticipated costs.

Table 4-1
CAT Service Improvement Needs and Annual O&M Costs
For TDP Six-Year Period
(Costs in FY 11 dollars)

Route	Proposed Service Change	Chmge in: M-F Hours	Sat. Hours	Sun. Hours	Annual Hours	Cost of Change
Free Trolley	Reduced evening & Sat. a.m. frequencies	0.0	0.0	0.0	0	$0
Route 1	Change Rte 1 approach to PVCC via Avon, Mill Creek & VA 20	-0.5	-0.5	0.0	-150	-$10,100
	Relabel Route 1B to Route 1					
Route 2	Bi-direcitonal service on Route 2	0.5	0.5	0.0	150	$10,100
	Relabel Route 2B to Route 2					
Route 3	Route alignment modifications	0.0	0.0	0.0	0	$0
	Improved midday and Sat. frequencies	3.0	9.0	0.0	1,240	$83,600
Route 4	Eliminate circuitous routing	-4.7	-2.9	0.0	-1,350	-$91,000
	Extend to Barracks Road	9.5	6.0	0.0	2,730	$184,100
Route 5	Bi-directional travel on Rio Road	0.0	0.0	0.0	0	$0
	Split into Routes 5A and 5B, with extension to Hollymead	12.7	12.7	0.0	3,900	$262,900
Route 6	Route alignment modifications	4.8	3.0	0.0	1,380	$93,000
	Routes 4-6/22 Evening Service Changes			0.0	0	$0
Route 7	Morning run time adjustments (adds a bus to a.m. service)	4.3	4.3	0.0	1,320	$89,000
	Split into Routes 7A and 7B (7A on Hillsdale Extension)	10.8	10.8	0.0	3,320	$223,800
	Extend Sunday evening hours	0.0	0.0	1.5	80	$5,400
Route 8	Extend to Albemarle Place and Meadows Community	0.0	0.0	0.0	0	$0
Route 9	Route alignment modifications	0.0	0.0	0.0	0	$0
	Modify to connect to McIntire Park YMCA	0.0	0.0	0.0	0	$0
Route 10	Combine with Routes 1A & 2A, and modify into Routes 10A/10B.	0.0	0.0	0.0	0	$0
	Route 10 operates north of 250, Route 12 operates south	0.0	2.5	0.0	130	$8,800
Evening	Modifications to service hours for evening routes	-0.7	-4.5	0.0	-420	-$28,300
Totals		**39.7**	**40.9**	**1.5**	**12,330**	**$831,300**

Longer-Term Service Needs

Other service needs that have been identified as likely being longer-term than this TDP's six-year time period are as follows:

- Route 9 modified to operate as a new crosstown route between Charlottesville High School and South Charlottesville (Route 9 would no longer serve downtown)
- A new crosstown route between Barracks Road Shopping Center and Martha Jefferson Hospital, operating at 30-minute peak and 60-minute midday service (labeled Route 11 in the TDP long-range plan)
- A new route between Downtown Charlottesville and the Fashion Square Mall via McIntire Road and East Rio Road, with eventual realignment to the proposed Meadow Creek Parkway (labeled Route 17 in the TDP long-range plan)
- New limited stop service along the US 29 corridor between UVA and Charlottesville-Albemarle Airport via two routes – each operating at 30-minute all-day frequencies. One route (Route 101) would operate just to Fashion Square Mall. The other Route (Route 102) would operate the full corridor, thus resulting in a combined 15-minute frequency south of Fashion Square Mall. This service could be a pre-curser to eventual BRT service in this corridor. A park-and-ride facility is also proposed at the northern end of this corridor (to be served by Route 102).
- Significant expansion of Sunday service route offerings, with new Sunday service on Routes 1, 3, 4, 5A, 5B, 6, 7A and 10A
- Improvement of Sunday service frequencies on the Free Trolley

Table 4-2 presents a summary of service needs and costs that were identified outside of the TDP's six-year time period.

Table 4-2
CAT Service Improvement Needs and Annual O&M Costs
Beyond the TDP Six-Year Period
(Costs in FY 11 dollars)

Route	Proposed Service Change	Chmge in: M-F Hours	Sat. Hours	Sun. Hours	Annual Hours	Cost of Change
Route 9	Modification into S. C'ville/C'ville H.S. Crosstown	0	0	0	0	$0
Route 11	New service between Barracks Road & Pantops	19	0	0	4,830	$325,600
Route 17	New Rio Rd/McIntire Service - Fashion Sq. to Downtown	25	0	0	6,350	$428,100
Routes 101/102	New Limited Stop US 29 Service	50.1	0	0	12,730	$858,300
Multiple	New Sunday Service on Routes 1, 3, 4, 5A/5b, 6, 7A, 10A	0	0	70.5	3,600	$242,700
Free Trolley	Freq. Change on Free Trolley	0	0	5.3	270	$18,200
		94.1	**0**	**75.8**	**27,780**	**$1,872,900**

Consideration of Alternative Route Structure Design

As part of this TDP effort and its public / stakeholder outreach effort, it was requested that consideration be given to an alternative route structure that resembled more of a "trunk and feeder" system, with the trunk being West Main and the US 29 corridor where there is frequent transit service, and other CAT routes modified as "feeder" routes that are turned back at stops along the "trunk". For illustrative purposes only, the existing CAT system was modified to resemble a trunk and feeder system. This illustrative plan, with a discussion of advantages and disadvantages is presented in a white paper (dated February 2011). A key advantage of the trunk and feeder system is a reduction in bus volumes circulating through downtown Charlottesville. However, such a system does create the following operational concerns:

- Travel time savings by turning routes back can result in improved service frequencies. However, those service frequency improvements are typically 5 or 10-minutes, thus resulting in schedules that prohibit timed transfers (e.g., two routes with 60-minute frequencies may have 50 and 55 minute frequencies, respectively, thus prohibiting the scheduling of timed transfers between those two routes).
- Travel times saved by turning routes back at the trunk are generally not sufficient to save on vehicle requirements, thus there is no significant savings in O&M costs.
- A trunk and feeder system will result in trips requiring multiple transfers (e.g., a trip that does not currently require a transfer, or requires one transfer, may require two transfers under the trunk and feeder configuration). Thus, passenger travel times are likely to increase.
- A trunk and feeder system results in new locations where significant passenger transfer activity will be required. Pedestrian amenities will be required at those locations (to accommodate passengers waiting for buses, and for passengers crossing streets to get to their connecting bus). Pull-out bus bays will also be needed at these locations.

The conclusion reached from this analysis is that conversion of the CAT transit system to a trunk and feeder system is not yet feasible. Should the system grow into Albemarle County, it will be appropriate to create satellite transit transfer facilities, with the introduction of community circulators and crosstown routes that do not go to the Downtown Transit Station (DTS). At that time, it will be more appropriate to consider route modifications that include features of a trunk and feeder system. In fact, almost all of the new service proposals presented in this TDP's Long-Range Plan (beyond the TDP's 6-year period) reflect routes that do not go to/from downtown Charlottesville. However, at this current time, the consequences of converting CAT to a trunk and feeder system appear to outweigh any benefits.

Consideration of optional service designs for the Free Trolley was also requested through this project's public / stakeholder outreach effort. Alternative service designs were presented to this TDP's Project Advisory Committee (PAC). These alternative designs included extension of Free Trolley service to Barracks Road, extension of service to Pantops, and modification of the alignment through UVA. The conclusion reached by this project's PAC is that the Free Trolley should remain in its current configuration in the near-term. Any future service design options for the Free Trolley should take into consideration potential negative impacts on CAT's farebox revenues.

4.4 Transit Facilities and Equipment Needs

Facilities and equipment needs have been identified with regards to vehicle requirements, transit center facilities, corridor improvements and bus circulation / roadway improvements.

Vehicle Requirements

Service needs identified for the TDP's six-year time period will require three (3) additional buses in peak period service (4 fleet vehicles, when including a spare). Service needs identified as likely being beyond the TDP's six-year period are anticipated to require an additional 8 peak/10 fleet vehicles. Costs for bus purchases depend on the vehicle type. Current unit costs for CAT vehicles are as follows:

- 29' Hybrid Bus – $610,000
- 35' Diesel Bus - $450,000
- 35' Replica Trolley Bus - $505,000
- Body-on-Chassis bus (small bus) - $105,000

In addition to purchases for bus fleet expansion, there will be costs related to bus and non-revenue vehicle replacements. Chapter 5 presents a schedule for both bus replacement and expansion.

Bus Stop Improvements

CAT typically programs $50,000 (in current year dollars) for bus stop improvements in its Capital Improvements Program.

Transit Station Facilities

The major transit facility needed in the TDP's six-year time period is a transit station at Barracks Road Shopping Center. Presently, buses circulate through the shopping center's parking lot, with pick-ups and drop-offs at two locations in front of the shopping center. Circulation through the shopping center takes significant time, and interaction with autos in the parking lot does present a safety hazard. CAT has worked with the shopping center owner in developing a plan that will move buses through a new east-west passage in the middle of the shopping center. The estimated cost for this improvement is $1.7 million.

Corridor Improvements

As noted earlier in this chapter, the Places 29 Study and the RTA Study both identified the need for high frequency transit service in the US 29 corridor. Bus Rapid Transit (BRT) has been suggested as a potential transit mode. Specific features of a BRT service in this corridor have not been defined, but would likely include enhanced passenger stop amenities, pull-out bays at stops, real-time passenger information system, an off-street suburban transit center at/near Fashion Square Mall, queue jumper lanes/traffic signal improvements, bus-only lanes at select locations, and a park-and-ride facility in the

vicinity of Hollymead. Costs for US 29 corridor improvements will depend on the final definition of the corridor transit improvements.

Bus Circulation / Roadway Improvements

The Charlottesville Transit Improvement Study (2005) identified some roadway improvements that would address existing bus circulation issues. One improvement identified in the 2005 study that still warrants consideration is the creation of an afternoon eastbound peak period exclusive bus lane on West Main, from 11th Street to 5th Street. This can be achieved by removing parking on the south side of West Main Street. Granting buses exclusive use of this lane would enable buses to bypass the queue of vehicles backed up from the traffic signal at West 5th Street/McIntire and West Main. The 2005 report noted this improvement would affect 41 spaces that were about ½ occupied.

Another improvement that was identified in the 2005 Transit Improvement Study and validated in this TDP effort was the desire to have Route 7 buses follow the Trolley routing from Water Street to Market Street (across the pedestrian mall) via West 2nd Street. This may require the elimination of one or two on-street parking spaces.

A third roadway modification noted in the Transit Improvement Study was the closure of University Avenue to all traffic except buses and emergency vehicles between Rugby Road and Chancellor Street. This roadway modification would improve bus on-time performance for Route 7 and the Free Trolley. However, further study is required to determine traffic-related impacts before advancing this proposal.

The final bus circulation need that was identified from this TDP effort is more direct access between Water Street and Garrett Street. This can be accomplished by creating a 4th Street SE Transit Way. The road bed of 4th Street SE would need to be lowered to allow passage of CAT buses under the existing railroad tracks. This Transit Way will make it possible to disperse buses departing from the Downtown Transit Station more directly out of the Downtown area with less circuitous routing. Routes that would benefit from this Transit Way are Routes 1, 3, 4, 6, 21, 22 and 23.

Costs for these bus circulation / roadway improvements have yet to be determined.

4.5 Other Identified Needs

As noted in Chapter 1 of this TDP, CAT is housed within the City's Public Works Department. Decisions regarding CAT service changes are often made directly by the Charlottesville City Council. Often, cities that operate transit service will appoint a board or committee to oversee transit-related issues. This lessens time demands on a City Council, and allows for more in-depth community involvement / direction into transit-related issues. An example of the benefits provided by a committee's involvement is this TDP's Project Advisory Committee (PAC). As noted in the Introduction of this TDP, a PAC was created to guide the development of this TDP. This group included representation from various interests, and met several times throughout the TDP process. This committee provided CAT staff and the TDP consultants with in-depth discussion and direction on transit service issues that would not have been possible with the City Council.

It is recommended that the City consider establishing a Transit Advisory Committee (such as the PAC that was formed for this TDP). Members of this committee should represent various geographic areas and interests of Charlottesville, and should include representation from UVA and Albemarle County (as

financially vested stakeholders of CAT). The primary function of this committee is to serve as a liaison between the Charlottesville City Council and CAT staff. Other functions / responsibilities of this committee would need to be determined, but at minimum, could include the following:

- Review monthly service performance reports from CAT staff
- Work with CAT staff in addressing service requests and complaints
- Make recommendations to the City Council regarding transit-related policies and service changes
- Function as a sounding board and provide direction for updates of this TDP
- Serve as a resource for interjurisdictional transit coordination
- Participate in transit-related public forums

5.0 SIX-YEAR TRANSIT SERVICE AND FACILITY PLAN

This chapter identifies the cost-feasible transit service and capital needs that are recommended for inclusion in the TDP time period (FY 2012 through FY 2017). An unconstrained list of potential service needs were identified the Long Range Service Plan of *Technical Memorandum 8 – Service Plan Recommendations* as part of the Expanded TDP project. They are also listed in the prior chapter of this TDP. Recommended improvements presented in this chapter are financially constrained, based on anticipated funding availability during the TDP time period. Chapter 6 details the TDP Capital Investment Program and Chapter 7 establishes the Financial Plan for the Charlottesville Area Transit (CAT) Six-Year TDP.

5.1 Transit Service Recommendations

The transit service improvements identified in this "TDP Six-Year Transit Service and Facility Plan" are consistent with those that were presented in the Near-Term (years 1-3) and Short-Range (years 4-6) sections of *Technical Memorandum 8 – Service Plan Recommendations* of the Expanded TDP document.

The near-term plan that is presented in *Technical Memorandum 8* reflects proposed service changes over the next three years (FYs 2012, 2013 and 2014), many of which can be implemented concurrent with CAT's next scheduled service change in August 2011. The near-term plan represents a cost-neutral approach in service hours; therefore recommendations are designed to maintain yet optimize the existing service structure with minimal route re-design. Improvements in on-time performance are prioritized while also addressing those services which are the least cost-effective. The pending relocation of Martha Jefferson Hospital is also a critical catalyst to this plan. With that in mind, any route re-structuring that occurs in the near-term plan remains cognizant of recommendations in the short-range plan to minimize customer impact.

The short-range plan is planned for implementation in FYs 2015, 2016 and 2017. It represents a more aggressive approach toward transit expansion, reflecting a 14% increase in service-hours, and includes service initiatives both inside and outside of the Charlottesville city limits. Evening service offerings are also improved in the short-range plan.

The following sections list proposed transit service improvements by projected year of implementation. Greater detail of each service modification can be found in *Technical Memorandum 8 – Service Plan Recommendations* of the Expanded TDP document. It is important to note that initiatives planned for the latter three years are dependent on the availability of local funding. Thus, initiatives proposed for years 4-6 may be exchanged within this timeframe or even delayed to later years should local funding not come to fruition.

FY 2012 Transit Service Improvements

- Renumber Route 2B to Route 2 and modify route to provide bi-directional service along the Albemarle County segments of the service;
- Renumber Route 1B to Route 1;
- Create new Route 10 by combining streamlined segments of Route 1A with northernmost segments of Route 10;

- Create new Route 12 by combining streamlined segments of Route 2A with the southernmost segments of Route 10;
- Decrease evening frequency on Route 21 from 30 minutes to 60 minutes to better match customer demand;
- Apply routing modifications to Evening Route 24 to match those recommended to Route 10 (i.e., service to the new Martha Jefferson Hospital campus); and
- Modify Route 5 to provide bi-directional travel along Rio Road.

FY 2013 Transit Service Improvements

- Decrease evening and Saturday morning frequency on the Free Trolley from 15 minutes to 30 minutes to better match customer demand;
- Adjust Route 7's morning running times by adding one vehicle to improve on-time performance plus adjust inbound routing in downtown to mimic the Free Trolley;
- Change Route 1's approach to PVCC via Avon Street, Mill Creek Drive and VA 20;
- Modify Route 3 to assume productive stop segments along Monticello Avenue currently served by Route 1B;
- Streamline Route 4 to provide bi-directional corridor service along Cherry Avenue;
- Modify Route 6 to assume the Forrest Hills neighborhood currently served by Route 4, new service to Brookwood and bi-directional service throughout the core of the route;
- Modify Route 9's inbound routing to maintain bi-directional service along 10th Street; and
- Apply similar routing modifications to Evening Routes 21 and 23 to match those recommended to Routes 3 and 1, respectively.

FY 2014 Transit Service Improvements

- No service modifications are proposed for FY 2014.

FY 2015 Transit Service Improvements

- Provide service to Hollymead with new Route 5B; and
- Extend Route 9 to serve the new McIntire Park YMCA.

FY 2016 Transit Service Improvements

- Improve midday frequency on Route 3 from 60 minutes to 30 minutes, Monday-Saturday;
- Provide new connectivity between South Charlottesville, UVA and Barracks Road Shopping Center via Route 4; and
- Simplify night service be eliminating special route nomenclature, instead offering night service on Routes 1, 3, 4, 6 and 10 in addition to existing Routes 5, 7 and the Free Trolley.

FY 2017 Transit Service Improvements

- Provide service to the new Hillsdale Drive extension by splitting the existing Route 7 into two branches – Route 7A and 7B; and
- Provide service to the new Albemarle Place development via Route 8.

Figure 5-1 illustrates the proposed CAT transit network (daytime routes) at the end of the TDP six-year time period. Detailed alignment figures are provided in this TDP's *Technical Memorandum 8*. Tables 5-1 and 5-2 present a listing of bus-hours and bus requirements associated with each identified CAT bus route. As noted in the table below, annual revenue bus-hours are anticipated to grow from 89,100 to nearly 101,400, with most of that growth occurring from FY 2015 to FY 2017. Appendices in *Technical*

Memorandum 8 – Service Plan Recommendations of the Expanded TDP document present detailed service plan tables for each three-year planning horizon of the six-year TDP time period.

5.2 O&M Costs

Proposed service changes and O&M costs associated with each service change in the TDP six-year time period is presented in Table 5-3. Costs are presented in current (FY 2011) dollars and are based on an hourly rate of $67.42 per revenue bus-hour (inclusive of fuel costs). This TDP reflects $831,000 in proposed transit service changes over the TDP's six-year time period (in current year dollars). Costs remain stable (in current year dollars) until FY 2015. The most significant cost increase occurs in FY 2016 when Route 3 is improved to 30-minute frequency during weekday and Saturday daytime hours and when Route 4 is extended north to Barracks Road Shopping Center.

Figure 5-1
Proposed CAT Transit System Map (at end of Six-Year TDP)

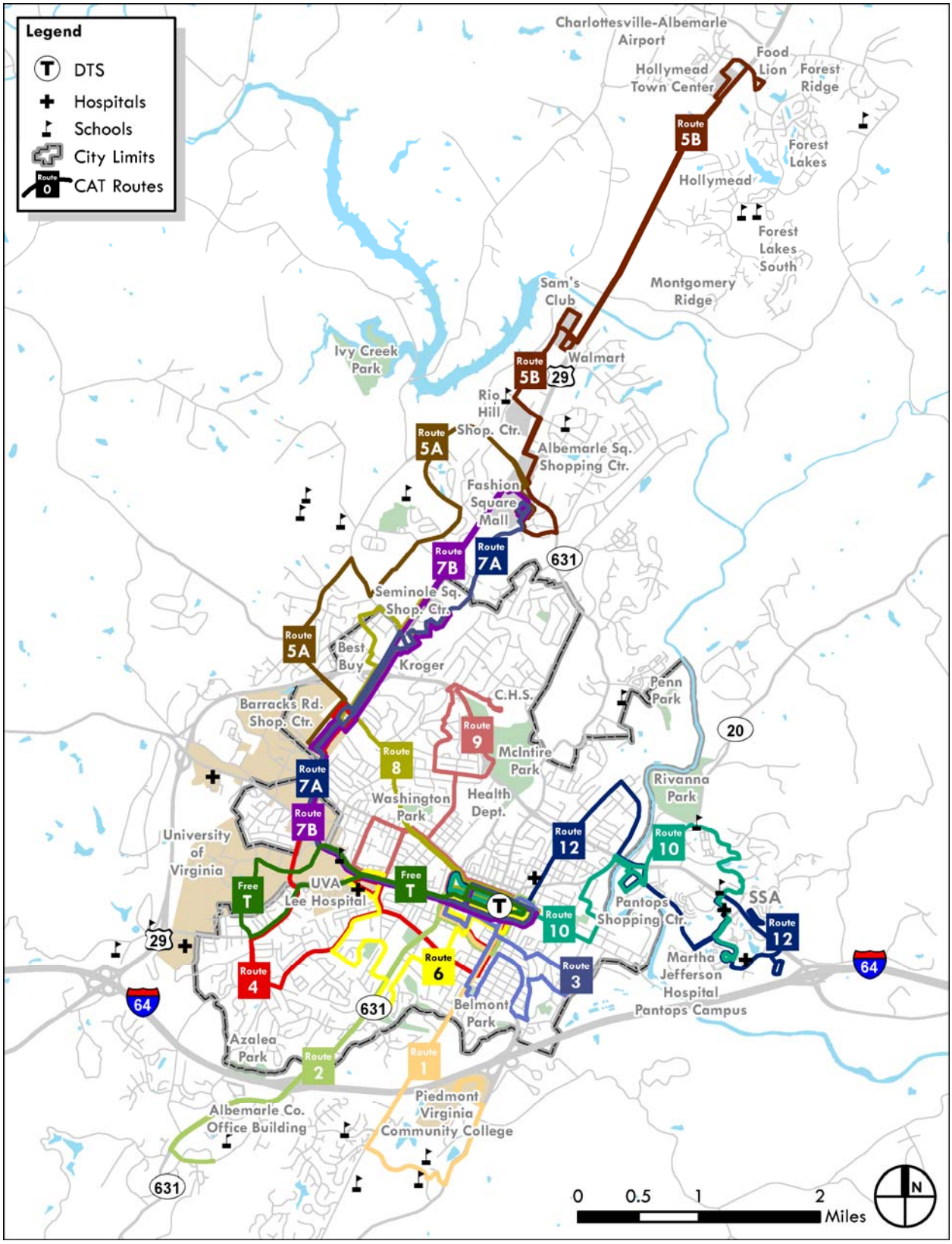


Table 5-1
Estimated Daily Revenue Bus-Hours

Weekday Service

Route Name	Daily Revenue Bus-Hours by Route						
	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	44.8	44.8	40.8	40.8	40.8	40.8	40.8
1A - East Market	6.5	-	-	-	-	-	-
1B (1) - PVCC	6.0	5.5	5.5	5.5	5.5	8.0	8.0
2A - Locust Avenue	6.5	-	-	-	-	-	-
2B (2) - Southwood	6.0	6.5	6.5	6.5	6.5	6.5	6.5
3 - Belmont	10.0	10.0	10.0	10.0	10.0	15.5	15.5
4 - UVA Hospital/Frys Spring	19.0	19.0	14.3	14.3	14.3	27.6	27.6
5 - Barracks Road/Walmart	47.3	47.3	47.3	47.3	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	30.0	30.0	30.0
5B - Hollymead/Fashion Square	-	-	-	-	30.0	30.0	30.0
6 - Ridge/UVA Hospital	9.5	9.5	14.3	14.3	14.3	18.8	18.8
7 - Fashion Square	73.5	73.5	77.8	77.8	77.8	77.8	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	51.1
7B - Seminole/Fashion Square	-	-	-	-	-	-	37.5
8 - Preston/Barracks Road	19.0	19.0	19.0	19.0	19.0	19.0	19.0
9 - Charlottesville High School	12.0	12.0	12.0	12.0	12.0	12.0	12.0
10 - Pantops (Meade/Pantops)	13.0	13.0	13.0	13.0	13.0	18.0	18.0
12 -Locust/ Pantops	-	13.0	13.0	13.0	13.0	13.0	13.0
21 - Belmont (Night Service)	5.0	2.5	2.5	2.5	2.5	-	-
22 - Prospect/UVA Hospital (Night Service)	5.0	5.0	5.0	5.0	5.0	-	-
23 - PVCC (Night Service)	2.5	2.5	2.5	2.5	2.5	-	-
24 - Pantops (Night Service)	2.5	5.0	5.0	5.0	5.0	-	-
Total Weekday Revenue Hours	**288.1**	**288.1**	**288.5**	**288.5**	**301.2**	**317.0**	**327.8**

Saturday Service

Route Name	Daily Revenue Bus-Hours by Route						
	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	44.8	44.8	38.8	38.8	38.8	38.8	38.8
1A - East Market	6.5	-	-	-	-	-	-
1B (1) - PVCC	6.0	5.5	5.5	5.5	5.5	8.0	8.0
2A - Locust Avenue	6.5	-	-	-	-	-	-
2B (2) - Southwood	6.0	6.5	6.5	6.5	6.5	6.5	6.5
3 - Belmont	6.5	6.5	6.5	6.5	6.5	15.5	15.5
4 - UVA Hospital/Frys Spring	12.0	12.0	9.1	9.1	9.1	21.3	21.3
5 - Barracks Road/Walmart	47.3	47.3	47.3	47.3	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	30.0	30.0	30.0
5B - Hollymead/Fashion Square	-	-	-	-	30.0	30.0	30.0
6 - Ridge/UVA Hospital	6.0	6.0	9.0	9.0	9.0	14.3	14.3
7 - Fashion Square	73.5	73.5	77.8	77.8	77.8	77.8	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	51.1
7B - Seminole/Fashion Square	-	-	-	-	-	-	37.5
8 - Preston/Barracks Road	12.0	12.0	12.0	12.0	12.0	12.0	12.0
9 - Charlottesville High School	12.0	12.0	12.0	12.0	12.0	12.0	12.0
10 - Pantops (Meade/Pantops)	13.0	13.0	13.0	13.0	13.0	18.0	18.0
12 - Locust/Pantops	-	13.0	13.0	13.0	13.0	13.0	13.0
21 - Belmont (Night Service)	5.0	2.5	2.5	2.5	2.5	-	-
22 - Prospect/UVA Hospital (Night Service)	5.0	5.0	5.0	5.0	5.0	-	-
23 - PVCC (Night Service)	2.5	2.5	2.5	2.5	2.5	-	-
24 - Pantops (Night Service)	2.5	5.0	5.0	5.0	5.0	-	-
Total Saturday Revenue Hours	**267**	**267**	**266**	**265.5**	**278**	**297**	**308.0**

Sunday Service

Route Name	Daily Revenue Bus-Hours by Route						
	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	9.8	9.8	9.8	9.8	9.8	9.8	9.8
7 - Fashion Square	25.1	26.6	26.6	26.6	26.6	26.6	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	26.6
Total Sunday Revenue Hours	**34.9**	**36.4**	**36.4**	**36.4**	**36.4**	**36.4**	**36.4**

Total Annual Revenue Hours	**89,110**	**89,190**	**89,210**	**89,210**	**93,110**	**98,130**	**101,440**

Note: Daily revenue hours annualized assuming 254 weekdays, 53 Saturdays and 51 Sundays

Table 5-2
Estimated Peak Vehicle Requirements

Weekday Service — **Daily Peak Vehicle Requirements by Route**

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1A - East Market	0.50	-	-	-	-	-	-
1B (1) - PVCC	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2A - Locust Avenue	0.50	-	-	-	-	-	-
2B (2) - Southwood	0.50	0.50	0.50	0.50	0.50	0.50	0.50
3 - Belmont	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4 - UVA Hospital/Frys Spring	2.00	2.00	1.50	1.50	1.50	2.50	2.50
5 - Barracks Road/Walmart	3.00	3.00	3.00	3.00	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	2.00	2.00	2.00
5B - Hollymead/Fashion Square	-	-	-	-	2.00	2.00	2.00
6 - Ridge/UVA Hospital	1.00	1.00	1.50	1.50	1.50	1.50	1.50
7 - Fashion Square	6.00	6.00	6.00	6.00	6.00	6.00	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	3.00
7B - Seminole/Fashion Square	-	-	-	-	-	-	3.00
8 - Preston/Barracks Road	2.00	2.00	2.00	2.00	2.00	2.00	2.00
9 - Charlottesville High School	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10 - Pantops (Meade/Pantops)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12 - Locust/Pantops	-	1.00	1.00	1.00	1.00	1.00	1.00
21 - Belmont (Night Service)	1.00	0.50	0.50	0.50	0.50	-	-
22 - Prospect/UVA Hospital (Night Service)	1.00	1.00	1.00	1.00	1.00	-	-
23 - PVCC (Night Service)	0.50	0.50	0.50	0.50	0.50	-	-
24 - Pantops (Night Service)	0.50	1.00	1.00	1.00	1.00	-	-
Total Weekday Peak Vehicles	**25**	**25**	**25**	**25**	**26**	**27**	**27**

Note: 2016 and 2017 peak bus requirement includes 3 evening bus pull-outs of Body-on-Chassis buses.

Saturday Service — **Daily Peak Vehicle Requirements by Route**

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	3.00	3.00	3.00	3.00	3.00	3.00	3.00
1A - East Market	0.50	-	-	-	-	-	-
1B (1) - PVCC	0.50	0.50	0.50	0.50	0.50	0.50	0.50
2A - Locust Avenue	0.50	-	-	-	-	-	-
2B (2) - Southwood	0.50	0.50	0.50	0.50	0.50	0.50	0.50
3 - Belmont	0.50	0.50	0.50	0.50	0.50	1.00	1.00
4 - UVA Hospital/Frys Spring	1.00	1.00	0.75	0.75	0.75	1.25	1.25
5 - Barracks Road/Walmart	3.00	3.00	3.00	3.00	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	2.00	2.00	2.00
5B - Hollymead/Fashion Square	-	-	-	-	2.00	2.00	2.00
6 - Ridge/UVA Hospital	0.50	0.50	0.75	0.75	0.75	0.75	0.75
7 - Fashion Square	6.00	6.00	6.00	6.00	6.00	6.00	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	3.00
7B - Seminole/Fashion Square	-	-	-	-	-	-	3.00
8 - Preston/Barracks Road	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9 - Charlottesville High School	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10 - Pantops (Meade/Pantops)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12 - Locust/Pantops	-	1.00	1.00	1.00	1.00	1.00	1.00
21 - Belmont (Night Service)	1.00	0.50	0.50	0.50	0.50	-	-
22 - Prospect/UVA Hospital (Night Service)	1.00	1.00	1.00	1.00	1.00	-	-
23 - PVCC (Night Service)	0.50	0.50	0.50	0.50	0.50	-	-
24 - Pantops (Night Service)	0.50	1.00	1.00	1.00	1.00	-	-
Total Saturday Peak Vehicles	**22**	**22**	**22**	**22**	**23**	**24**	**24**

Note: 2016 and 2017 peak bus requirement includes 3 evening bus pull-outs of Body-on-Chassis buses.

Sunday Service — **Daily Peak Vehicle Requirements by Route**

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7 - Fashion Square	3.00	3.00	3.00	3.00	3.00	3.00	3.00
7A - Hillsdale/Fashion Square	-	-	-				
Total Sunday Peak Vehicles	**4**	**4**	**4**	**4**	**4**	**4**	**4**

Table 5-3
Estimated Operating Cost for Proposed Service Changes

Weekday Service

Daily Operating Cost by Route

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	$3,020	$3,020	$2,751	$2,751	$2,751	$2,751	$2,751
1A - East Market	$438	-	-	-	-	-	-
1B (1) - PVCC	$405	$371	$371	$371	$371	$539	$539
2A - Locust Avenue	$438	-	-	-	-	-	-
2B (2) - Southwood	$405	$438	$438	$438	$438	$438	$438
3 - Belmont	$674	$674	$674	$674	$674	$1,045	$1,045
4 - UVA Hospital/Frys Spring	$1,281	$1,281	$964	$964	$964	$1,861	$1,861
5 - Barracks Road/Walmart	$3,189	$3,189	$3,189	$3,189	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	$2,023	$2,023	$2,023
5B - Hollymead/Fashion Square	-	-	-	-	$2,023	$2,023	$2,023
6 - Ridge/UVA Hospital	$640	$640	$964	$964	$964	$1,267	$1,267
7 - Fashion Square	$4,955	$4,955	$5,245	$5,245	$5,245	$5,245	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	$3,445
7B - Seminole/Fashion Square	-	-	-	-	-	-	$2,528
8 - Preston/Barracks Road	$1,281	$1,281	$1,281	$1,281	$1,281	$1,281	$1,281
9 - Charlottesville High School	$809	$809	$809	$809	$809	$809	$809
10 - Pantops (Meade/Pantops)	$876	$876	$876	$876	$876	$1,214	$1,214
12 - Locust/Pantops	-	$876	$876	$876	$876	$876	$876
21 - Belmont (Night Service)	$337	$169	$169	$169	$169	-	-
22 - Prospect/UVA Hospital (Night Service)	$337	$337	$337	$337	$337	-	-
23 - PVCC (Night Service)	$169	$169	$169	$169	$169	-	-
24 - Pantops (Night Service)	$169	$337	$337	$337	$337	-	-
Total Daily Weekday Cost	**$19,424**	**$19,424**	**$19,451**	**$19,451**	**$20,307**	**$21,372**	**$22,100**

Saturday Service

Daily Operating Cost by Route

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	$3,020	$3,020	$2,616	$2,616	$2,616	$2,616	$2,616
1A - East Market	$438	-	-	-	-	-	-
1B (1) - PVCC	$405	$371	$371	$371	$371	$539	$539
2A - Locust Avenue	$438	-	-	-	-	-	-
2B (2) - Southwood	$405	$438	$438	$438	$438	$438	$438
3 - Belmont	$438	$438	$438	$438	$438	$1,045	$1,045
4 - UVA Hospital/Frys Spring	$809	$809	$614	$614	$614	$1,436	$1,436
5 - Barracks Road/Walmart	$3,189	$3,189	$3,189	$3,189	-	-	-
5A - Barracks Road/Fashion Square	-	-	-	-	$2,023	$2,023	$2,023
5B - Hollymead/Fashion Square	-	-	-	-	$2,023	$2,023	$2,023
6 - Ridge/UVA Hospital	$405	$405	$607	$607	$607	$964	$964
7 - Fashion Square	$4,955	$4,955	$5,245	$5,245	$5,245	$5,245	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	$3,445
7B - Seminole/Fashion Square	-	-	-	-	-	-	$2,528
8 - Preston/Barracks Road	$809	$809	$809	$809	$809	$809	$809
9 - Charlottesville High School	$809	$809	$809	$809	$809	$809	$809
10 - Pantops (Meade/Pantops)	$876	$876	$876	$876	$876	$1,214	$1,214
12 - Locust/Pantops	-	$876	$876	$876	$876	$876	$876
21 - Belmont (Night Service)	$337	$169	$169	$169	$169	-	-
22 - Prospect/UVA Hospital (Night Service)	$337	$337	$337	$337	$337	-	-
23 - PVCC (Night Service)	$169	$169	$169	$169	$169	-	-
24 - Pantops (Night Service)	$169	$337	$337	$337	$337	-	-
Total Daily Saturday Cost	**$18,008**	**$18,008**	**$17,900**	**$17,900**	**$18,756**	**$20,037**	**$20,765**

Sunday Service

Daily Operating Cost by Route

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Free Trolley	$661	$661	$661	$661	$661	$661	$661
7 - Fashion Square	$1,692	$1,793	$1,793	$1,793	$1,793	$1,793	-
7A - Hillsdale/Fashion Square	-	-	-	-	-	-	$1,793
Total Daily Sunday Cost	**$2,353**	**$2,454**	**$2,454**	**$2,454**	**$2,454**	**$2,454**	**$2,454**

Annual Change in System Operating Costs

Route Name	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Annual Change in Costs (FY 11 dollars)	**n/a**	**$5,200**	**$1,100**	**$0**	**$262,800**	**$338,400**	**$223,500**
Annual Change in Costs (YOE dollars)	**n/a**	**$5,400**	**$1,200**	**$0**	**$295,800**	**$392,300**	**$266,900**

Notes:

1. Costs based on an hourly rate of $67.42 per revenue bus-hour (FY 11 dollars)
2. Costs annualized with 254 weekdays, 53 Saturdays and 51 Sundays
3. Year of Expenditure (YOE) dollars assume 3%/year inflation.

5.3 Transit Capital and Facility Recommendations

TDP capital improvement recommendations for FY 2012 through FY 2017 are consistent with the service changes described above. Recommendations for the Six-Year TDP are identified by fiscal year below under each type of capital improvement.

Vehicle Fleet Replacement and Expansion

CAT presently owns a fleet of 36 revenue vehicles and 8 non-revenue vehicles. The revenue vehicle fleet consists of seventeen 35-foot buses, eight 29-foot buses, two 29-foot hybrid buses, five replica trolleys and four body-on-chassis buses. The body-on-chassis buses are used to operate evening service on routes whose peak loads do not necessitate a full-size transit bus. Tables 5-4 through 5-7 identify CAT's fleet composition and proposed fleet replacement and expansion plan. This table reflects when buses are to be delivered and available for revenue service. Bus replacements are based on a 12-year life span for buses and a four-year life span for buses (standard and replica trolley), and a 4-year life span for body-on chassis buses.

The mix of 29' and 35' buses is very important. Routes 5 and 7 require the larger buses. Further, these buses must cross under a low clearance railroad bridge (Route 7 in revenue service and Route 5 in non-revenue service). Thus, hybrid buses cannot be used on these routes. The bus replacement/expansion plan for this TDP maintains a sufficient fleet of 35' diesel buses to operate on Routes 5 and 7. All other routes (with exception of the Free Trolley) assume operation of 29' buses, with a transition from diesel to hybrid buses.

A total of 23 new vehicles are programmed for replacement needs and expansion during the six-year TDP time period.

Non-Revenue Vehicle Fleet Replacement and Expansion

CAT must also maintain a fleet of non-revenue vehicles for use by staff. CAT presently has eight non-revenue vehicles. Replacement requirements for these vehicles are as follows:

- FY 2015 – Replace 2000 Ford (#832), 2001 Chevrolet (#805), 2002 Ford (#806)
- FY 2016 – Replace three 2006 Fords (#10, #11, #12)
- FY 2017 – Replace two 2004 Bobcats (#1 & #2)

Maintenance Facility

CAT recently opened a new operating facility located on Avon Street Extended and adjacent to the Charlottesville City Schools' school bus facility. This facility has adequate space to accommodate CAT's projected service needs over the next six years.

Table 5-4
Transit Fleet Replacement and Expansion Schedule

Year	Make	Size (in Feet)	Existing/Future Bus #'s	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Replacement Notes
29 AND 35-FOOT BUSES (Diesel & Hybrid)											
1998	New Flyer	35	821,822,824,827	4	-	-	-	-	-	-	
2001	Chance Opus	29	843,845,846,842,844,847	6	3	1		-	-	-	
2001	New Flyer	35	840,841	2	2	2	-	-	-	-	
2004	Chance Opus	29	849	1	1	1	1	-	-	-	
2008	Gillig	29	200	1	1	1	1	1	1	1	
2008	Gillig	35	100,101,102,103,105,106,107	7	7	7	7	7	7	7	
2010	Gillig	35	108,109,110,111	4	4	4	4	4	4	4	
2011	Gillig - Hybrid	29	201,202	2	2	2	2	2	2	2	
2012	Hybrid Bus	29	203,204,205,206		4	4	4	4	4	4	Replace 821, 822, 824, 827
2012	Hybrid Bus	29	207,208,209	-	3	3	3	3	3	3	Replace 843, 845, 846
2013	Hybrid Bus	29	210,211	-	-	2	2	2	2	2	Replace 842, 844
2014	Hybrid Bus	29	212, 213, 214	-	-	-	3	3	3	3	Replace 840, 841, 847
2015	Diesel Bus	29	215					1	1	1	Replace 849
Total Sub-Fleet				**27**	**27**	**27**	**27**	**27**	**27**	**27**	
	29 foot buses			*10*	*11*	*12*	*13*	*16*	*16*	*16*	
	35 foot buses			*17*	*13*	*13*	*11*	*12*	*12*	*12*	
Peak Requirement for Standard Buses				**19**	**19**	**19**	**19**	**20**	**21**	**21**	
Spares for Standard Buses				**8**	**8**	**8**	**8**	**7**	**6**	**6**	
Standard Bus Spare Ratio %age				**42%**	**42%**	**42%**	**42%**	**35%**	**29%**	**29%**	
REPLICA TROLLEY BUSES (Diesel)											
2000	Chance Trolley	30	830, 831	2	2	-	-	-	-	-	
2002	Chance Trolley	30	848	1	1	1	-	-	-	-	
2003	Chance Trolley	30	833	1	1	1	1	-	-	-	
2009	Gillig Trolley	30	400	1	1	1	1	1	1	1	
2013	Trolley	35	401, 402	-	-	2	2	2	2	2	Replace 830, 831
2014	Trolley	35	403	-	-	-	1	1	1	1	Replace 848
2015	Trolley	35	404	-	-	-	-	1	1	1	Replace 833
Total Sub-Fleet				**5**	**5**	**5**	**5**	**5**	**5**	**5**	
Peak Requirement for Trolley Buses				**3**	**3**	**3**	**3**	**3**	**3**	**3**	
Spares for Trolley Buses				**2**	**2**	**2**	**2**	**2**	**2**	**2**	
Trolley Bus Spare Ratio %age				**67%**	**67%**	**67%**	**67%**	**67%**	**67%**	**67%**	

Table 5-4
Transit Fleet Replacement and Expansion Schedule

Year	Make	Size (in Feet)	Existing/Future Bus #'s	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Replacement Notes
29 AND 35-FOOT BUSES (Diesel & Hybrid)											
BODY-ON-CHASSIS (Diesel)											
2007	Startrans	25	304	1	-	-	-	-	-	-	
2008	Startrans	25	305	1	1	-	-	-	-	-	
2011	Startrans	25	306, 307	2	2	2	2	-	-	-	Replace 302, 303
2012	Body-on-Chassis	25	308	-	1	1	1	1	-	-	Replace 304
2013	Body-on-Chassis	25	309	-	-	1	1	1	1	-	Replace 305
2015	Body-on-Chassis	25	310, 311	-	-	-	-	2	2	2	Replace 306,307
2016	Body-on-Chassis	25	312	-	-	-	-	-	1	1	Replace 308
2017	Body-on-Chassis	25	313	-	-	-	-	-	-	1	Replace 309
Total Sub-Fleet				**4**	**4**	**4**	**4**	**4**	**4**	**4**	
Peak Requirement for Small Buses				**3**	**3**	**3**	**3**	**3**	**3**	**3**	
Spares for Small Buses				**1**	**1**	**1**	**1**	**1**	**1**	**1**	
Small Bus Spare Ratio %age				**33%**	**33%**	**33%**	**33%**	**33%**	**33%**	**33%**	
TOTALS											
Total Fleet				**36**	**36**	**36**	**36**	**36**	**36**	**36**	
Peak Requirement				**25**	**25**	**25**	**25**	**26**	**27**	**27**	
Spare Vehicles				**11**	**11**	**11**	**11**	**10**	**9**	**9**	
Spare Ratio %age				**44%**	**44%**	**44%**	**44%**	**38%**	**33%**	**33%**	

Other Facilities

Currently, the Downtown Transit Station (DTS) functions as the main centralized connection point between CAT routes. However, as the CAT system grows, the need for safe, convenient locations to accommodate passenger transfers also increases. Barracks Road Shopping Center and Fashion Square Mall both serve as significant connection points outside of downtown Charlottesville. Of these two, Barracks Road Shopping Center is in the most critical need of facility investment. The shopping center has no formal facilities other than two passenger shelters and benches. Staging is accommodated in a drive aisle that is mixed with general purpose traffic. This creates safety issues as passengers cross between buses and private vehicles navigating the shopping center.

In recent years, modifications have been considered that would create an east-west transit passage through the middle of the Barracks Road Shopping Center property. This would allow direct, perpendicular movement between Emmet Street and Millmont Street. This new passage would also feature linear transit pull-out bays, capable of supporting multiple buses at any given time. However, due to changes in management at the shopping center and funding shortfalls, the transit center has not come to fruition. The most recent estimated cost for this improvement is $1.7 million and should be a top priority for facility improvements. This improvement needs to occur prior to FY 2016 when Route 4 is scheduled to be extended to Barracks Road Shopping Center. Following Barracks Road Shopping Center, the Fashion Square Mall should be the next facility considered for investment.

As noted in Chapter 4, some minor modifications may be required for the proposed re-routing of Route 7 to follow the Free Trolley Route (proposed in FY 2013). Other facility modifications noted in Chapter 4 (such as evolving US 29 to BRT service, creating the 4th Street SE Transit Way, and the Main Street exclusive bus-lane), are not proposed at this time for the TDP's six-year time period.

Bus Stop Improvements

As noted in Chapter 4, CAT typically programs $50,000 (in current year dollars) for bus stop improvements in its Capital Improvements Program. This practice is assumed to continue through the TDP six-year time period, with funding for bus stop improvements increasing at the rate of inflation.

5.4 Other Recommendations

In addition to the service and vehicle / facility recommendations described above, it is recommended that the City of Charlottesville establish a Transit Advisory Board, as described in Chapter 4.

6.0 CAPITAL IMPROVEMENTS PROGRAM

This chapter of the TDP describes capital programs required to carry out the operations and services set forth in the TDP service and facility recommendations that were presented in the prior chapter.

6.1 Vehicle Replacement and Expansion Program

As noted in the prior chapter, CAT presently owns a fleet of 27 standard buses (two of which are hybrids), 5 trolley buses and 4 small "cutaway" buses (used for evening service). CAT also owns eight non-revenue vehicles to support transit service. CAT programs bus purchases one year in advance in the CIP, for large bus purchases typically requires a grant request a year in advance of the year of expected delivery. Purchases for Body-on-Chassis and non-revenue vehicles are typically programmed in the CIP in the same year as expected delivery. Planned grant requests for the TDP six-year period are as follows:

FY 2012 – 5 units

- Funds to replace #304 with Body-on-Chassis diesel (#308)
- Funds to replace #830 and #831 with 35' diesel Replica Trolleys (#401 & #402). Delivery not expected until FY 2013
- Funds to replace #842 and #844 with 29-foot hybrid buses (#210 & #211). Delivery not expected until FY 2013

FY 2013 – 5 units

- Funds to replace #305 with Body-on-Chassis diesel (#309)
- Funds to replace #840 & #841 with 29-foot hybrid buses (#212 & #213). Delivery not expected until FY 2014
- Funds to replace #847 with 29-foot hybrid bus (#214). Delivery not expected until 2014
- Funds to replace #848 with 35-foot diesel Replica Trolley (#403). Delivery not expected until FY 2014

FY 2014 – 2 units

- Funds to replace #833 with 35-foot diesel Replica Trolley (#404). Delivery not expected until 2015
- Funds to replace #849 with 29-foot hybrid bus (#215). Delivery not expected until FY 2015

FY 2015 – 2 units plus 3 non-revenue vehicles

- Funds to replace #306 and #307 with Body-on-Chassis diesel (#310 & #311)
- Funds to replace 3 non-revenue vehicles

FY 2016 – 1 unit plus 3 non-revenue vehicles

- Funds to replace #308 with Body-on-Chassis diesel (#312)
- Funds to replace 3 non-revenue vehicles

FY 2017 – 1 unit plus 2 non-revenue vehicles

- Funds to replace #309 with Body-on-Chassis diesel (#313)
- Funds to replace 2 non-revenue vehicles

Table 6-1 presents anticipated costs for replacement and expansion vehicles in current year and year of expenditure (YOE) dollars. This table reflects costs when funds are anticipated to be needed for purchases (i.e., one-year prior to delivery for large buses).

Table 6-1
Vehicle Replacement / Expansion Capital Costs

Vehicle Type	2012		2013		2014		2015		2016		2017	
	Vehicles	Cost	Vehicles	Cost	Vehicles	Cost	Vehicles	Cost	Vehicles	Cost	Vehicles	Cost
29' Hybrid Bus*	2	$1,220,000	3	$1,830,000	1	$610,000						
35' Diesel Bus*												
35' Replica Trolley*	2	$1,010,000	1	$505,000	1	$505,000						
Body on Chassis	1	$105,000	1	$105,000			2	$210,000	1	$105,000	1	$105,000
Non-Revenue Vehicles							3	$114,000	3	$114,000	2	$65,000
Total Cost (FY 11$)	**5**	**$2,335,000**	**5**	**$2,440,000**	**2**	**$1,115,000**	**5**	**$324,000**	**4**	**$219,000**	**3**	**$170,000**
Year of Expenditure Cost		**$2,405,000**		**$2,589,000**		**$1,218,000**		**$365,000**		**$254,000**		**$203,000**

** Note - costs for 29' hybrid, 35' diesel and 35' replica trolley buses reflects costs in year prior to proposed delivery.*

Bus Unit Costs (FY11$)

29' Hybrid Buses	$610,000
35' Diesel Buses	$450,000
35' Replica Trolleys	$505,000
Body on Chassis	$105,000
Non-Revenue Vehicles	$38,000
BobCats	$32,500

6.2 Bus Stop Improvements

As noted earlier, CAT typically programs $50,000 annually in the CIP for bus stop improvements. Funding requirements for 2013 through 2017 total $250,000 in current year dollars. Costs in inflated dollars are as follows:

FY 2013 - $57,900
FY 2014 - $60,800
FY 2015 - $63,800
FY 2016 - $67,000
FY 2017 - $70,400

6.3 Transit Center Facilities

As noted in Chapter 5, a suburban transit center is proposed at the Barracks Road Shopping Center. This transit center will become even more critical once Route 4 is extended to Barracks Road, as proposed in FY 2016. A cost of $1.7 million has been identified for this new facility. For purposes of this TDP, it is assumed this improvement will be advanced in FY 2014, prior to the start of proposed Route 4 service to Barracks Road.

7.0 FINANCIAL PLAN

The financial plan is a principal objective of the TDP. It is in this chapter that an agency demonstrates its ability to provide a sustainable level of transit service over the TDP time period, including the rehabilitation and replacement of capital assets. This chapter identifies potential funding sources, annual operating and maintenance costs, funding requirements and funding sources for annual operating and maintenance costs, and funding requirements and funding sources for capital assets.

7.1 Existing Charlottesville Area Transit Costs and Funding Sources

CAT's FY 2012 budget is $6.018 million. This reflects a $229,000 increase over FY 11's budget. Revenues for CAT presently come from the following sources:

Table 7-1
CAT FY 20120 Projected Revenue Sources

Revenue Source	FY 2012 Budget Amount	% of Total
City of Charlottesville	$1,923,108	32.0%
Federal Operating Assistance (5307)	$1,513,169	25.1%
State Mass Transit Trust Fund	$825,612	13.7%
Albemarle County	$648,004	10.8%
Passenger Fares	$440,000	7.3%
Job Access (JARC)	$335,611	5.6%
UVA Fare-Free ID Access	$145,000	2.4%
UVA Free Trolley Assistance	$60,000	1.0%
Advertising	$75,000	1.2%
Rent	$52,908	0.9%
TOTAL	**$6,018,412**	**100%**

As noted above, the largest contributor to CAT's budget is the City of Charlottesville. CAT receives over 30% of its budget from federal programs (5307 and JARC). The State Mass Transit Trust Fund accounts for 13.7% of the projected budget. Revenues collected by the Commonwealth for the State Mass Transit Fund are distributed as follows:

- 74.25% towards operating assistance
- 25% to capital assistance
- 0.75% to special projects

In FY 2011, the Commonwealth was able to fund 35.7% of eligible operating expenses state-wide. As noted above, about $826,000 is to be distributed to the City of Charlottesville for operating assistance. Passenger fares and UVA funds combined (for both the Fare Free ID Access program and Free Trolley assistance) account for only 10% of projected revenues.

7.2 Anticipated Future Revenue Sources

This TDP assumes funds presently used for CAT operations will continue to be available during the TDP's six-year time period. Specific funding assumptions regarding each revenue source are as follows:

Federal Operating Assistance (5307). The Federal Transit Administration's (FTA's) 5307 program Section 5307 is a formula grant program for urbanized areas providing capital, operating, and planning assistance for mass transportation. This program was initiated by the Surface Transportation Act of 1982 and became FTA's primary transit assistance program in FY 1984. Funds are apportioned to urbanized areas utilizing a formula based on population, population density, and other factors associated with transit service and ridership. Section 5307 is funded from both General Revenues and Trust Funds. This TDP assumes 5307 funds for CAT will grow at a rate consistent with inflation (assumed to be 3% per year in this TDP).

State Mass Transit Trust Fund. Information presented in the State's SYIP indicates that funds collected for the State's Mass Transit Trust Fund for Operating Assistance are expected to grow by the following percentages over the TDP's six-year time period:

- FY 2012 – 3.60%
- FY 2013 – 4.03%
- FY 2014 – 4.11%
- FY 2015 – 4.26%
- FY 2016 – 3.18%

Projections for FY 2017 are not yet available, but have been assumed at 3.85% for this TDP (the average percent increase between FY 2012 and FY 2016). It is important to note that this reflects projected percent increases in *total* revenues in the Mass Transit Trust Fund. Funds available for specific transit agencies will vary, for funds are distributed by the State on a formula basis. For purposes of this TDP, it is assumed funds available for CAT will increase by these percentages.

Farebox Revenues. Fares for CAT are presently $0.75 for the general public, ages 6 to 64. There is a reduced fare for those over 65 or disabled, and children 5 and under ride free with an adult. Passes are also available that provide discounts (Day Pass and Monthly Pass). Fares are assumed to remain unchanged throughout the TDP time period. Ridership productivity (riders per revenue bus-hour of service) is assumed to increase slightly as a result of service recommendations presented in this TDP, thus resulting in modest fare revenue increases that are tied to revenue service-hours.

Job Access Reverse Commute (JARC) Funds (5316). JARC funds from FTA's 5316 program are currently used to help fund CAT's evening service. JARC funding is assumed to remain in place for the TDP's six-year period at current levels.

Albemarle County Funds. Albemarle County presently provides funding for Routes 5, 10, one half of Route 2B, and Route 24. TDP service plans assume that for the first three years of the TDP, Albemarle County funds 100% of Route 5, and 50% of Routes 2, 10A, 10B and 24, and for the second three-year period, Albemarle County funds 100% of Routes 5A and 5B, and 50% of Routes 2, 10A and 10B. Service hours attributable to Albemarle County routes remain fairly consistent on a percentage basis throughout the TDP six-year period, with Albemarle County routes accounting for 23-24% of CAT's

weekday service hours, and 25% of CAT's Saturday service hours. Therefore, it has been assumed that Albemarle County funding grows only at a rate consistent with inflation (assumed to be 3%/year in this TDP).

UVA Funding. CAT receives funding from UVA from two sources. The Fare-FREE Access program allows UVA students, staff and faculty to ride free with a valid UVA photo ID. UVA provides CAT funding in exchange for those trips. The amount received from UVA is negotiated, and is presently $145,000. It is assumed that this amount will increase only a rate consistent with inflation.

The second source of UVA funding is for the Free Trolley. The amount of funds received from UVA is negotiated, and is presently $60,000. It is assumed this amount will also increase at a rate consistent with inflation.

It is important to note that UVA funding levels assumed in this TDP are conservative. Surveys taken as part of this TDP effort indicate that UVA ridership on CAT routes is a much higher percentage than UVA's financial contribution. Seventy one percent (71%) of riders on the Free Trolley indicated they were affiliated with UVA. Thirty seven percent (37%) of riders on all other CAT routes indicated they were affiliated with UVA. These percentages are consistent with findings from prior ridership surveys. The Free Trolley presently costs about $1 million annually to operate. Thus, funding provided by UVA for the Free Trolley (6%) does not match with the existing split of UVA/non-UVA riders (71%/29%). Further, the funding split between UVA's FREE ID Access program and non-UVA passenger fares (25%/75%) does not match the ridership split for CAT's other routes (37%/63%). This imbalance in funding vs. ridership usage was previously noted in the 2005 Charlottesville Transit Improvement Study (2005). Thus, although this TDP's financial plan assumes UVA funding to remain at current levels (with growth only associated with inflation), consideration should be given to restructuring both UVA funding arrangements in a manner that is more in-line with usage.

Other Revenues. Other revenues come from advertising and rent (rent revenue is collected from the Charlottesville Albemarle Convention and Visitors Bureau and for a café at the Downtown Transit Station). Advertising revenues are assumed to increase at the rate of inflation. Rent revenues are assumed to remain unchanged, per the current five-year rental agreement.

City of Charlottesville Funding. This TDP's financial plan assumes the City of Charlottesville is responsible for covering all other transit operations expenses not covered by the revenue sources described above.

7.3 Cash Flow Analysis for Operations/Maintenance Costs

Table 7-2 presents a cash flow analysis of O&M costs and likely revenues for CAT. Key assumptions in this table are as follows:

- Costs identified for FY 2012 reflect the CAT 2012 operating budget.
- Costs for new / modified transit services reflect costs previously presented in Chapter 5.
- An inflation factor of 3 percent/year has been assumed in the cost estimates.
- Funding levels from existing revenue sources are based on assumptions described in Section 7.2.

Table 7-2
O&M Costs and Potential Revenue Sources
(Year of Expenditure Dollars)

OPERATIONS Service Costs/Funding Category	Budget FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
Projected Operating & Maintenance Costs						
Prior Year O&M Costs, Inflated	$6,018,412	$6,199,000	$6,386,200	$6,577,800	$7,078,900	$7,695,300
O&M Costs for Service Changes, Inflated	n/a	$1,200	$0	$294,900	$392,300	$266,900
Total O&M Costs	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
Change from Prior Year	$228,889	$181,788	$186,000	$486,500	$598,500	$491,000
Anticipated Non-City Funding Sources						
Federal Operating Assistance (5307)	$1,513,169	$1,558,600	$1,605,400	$1,653,600	$1,703,200	$1,754,300
State Operating Assistance	$825,612	$850,400	$875,900	$902,200	$929,300	$957,200
Albemarle County	$648,004	$674,100	$701,800	$731,700	$755,000	$784,000
Fare Revenues	$440,000	$445,000	$445,000	$464,600	$489,600	$506,600
Job Access Reverse Commute (JARC)	$335,611	$335,600	$335,600	$335,600	$335,600	$335,600
UVA - Fare-FREE ID Access	$145,000	$149,400	$153,900	$158,500	$163,300	$168,200
Advertising	$75,000	$77,300	$79,600	$82,000	$84,500	$87,000
UVA - Free Trolley Assistance	$60,000	$61,800	$63,700	$65,600	$67,600	$69,600
Rent	$52,908	$52,900	$52,900	$52,900	$52,900	$52,900
Total Non-City Funds	**$4,095,304**	**$4,205,100**	**$4,313,800**	**$4,446,700**	**$4,581,000**	**$4,715,400**
Percent Change from Prior Year		2.7%	2.6%	3.1%	3.0%	2.9%
City of Charlottesville Funding	**$1,923,108**	**$1,995,100**	**$2,072,400**	**$2,426,000**	**$2,890,200**	**$3,246,800**
Percent Change from Prior Year		3.7%	3.9%	17.1%	19.1%	12.3%
TOTAL REVENUE	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
		3.0%	3.0%	7.6%	8.7%	6.6%

Funding required from the City of Charlottesville is anticipated to increase from $1.923 million in FY 2012 to $3.253 million in FY 2017. Much of the increase begins in FY 2015, when significant service expansion is proposed. As noted above, financial assumptions used in this TDP assume no fare increase, and no substantive increase in funding from UVA or Albemarle County (besides inflation). City-required funds could be reduced through increased funding from any of these sources.

7.4 Capital Costs and Revenues

Table 7-3 presents estimated capital costs and potential funding sources for CAT. Key assumptions in this table are as follows:

- Costs for vehicles, bus stop improvements and the Barracks Road Transit Center were noted in Chapter 6.
- An inflation factor of 3 percent/year has been assumed in the cost estimates.
- Capital / vehicle revenue sources assume 80% funding from federal programs (5307/5309), 16% funding from City funds and 4% from State funds (State funds typically vary from 4 to 16%. For purposes of this TDP, 4% has been assumed)

As noted in the table below, local funding requirements vary each year, with the largest amount required in FY 2014, when the Barracks Road Transit Station is proposed.

Table 7-3
Capital Expenditures and Potential Revenue Sources
(Year of Expenditure Dollars)

CAPITAL Capital Costs/Funding Category	Projected FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
EXPENDITURES						
Bus & Non-Revenue Vehicle Purchases	$2,405,000	$2,589,000	$1,218,000	$365,000	$254,000	$203,000
Bus Stop Improvements	$0	$57,900	$60,800	$63,800	$67,000	$70,400
Barracks Road Transit Station	$0	$0	$1,700,000	$0	$0	$0
Total Expenditures	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**
FUNDING						
Anticipated Funding Sources						
Federal Grants (80%)	$1,924,000	$2,117,520	$2,383,040	$343,040	$256,800	$218,720
Local Funds (16%)	$384,800	$423,504	$476,608	$68,608	$51,360	$43,744
State Capital Assistance (4%)	$96,200	$105,876	$119,152	$17,152	$12,840	$10,936
Total Funding	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**

8.0 TDP MONITORING AND EVALUATION

This TDP has presented a comprehensive evaluation of the Charlottesville Area Transit's service and cost characteristics. Key elements that have been addressed in this TDP include:

- Documentation of City goals, objectives and potential performance standards that are to guide further development of CAT transit services;
- A detailed evaluation of service characteristics, with identification of system strengths and weaknesses;
- A peer agency review that compares CAT service and financial characteristics to other similar-sized systems;
- A summary of ridership counts by stop and on-board survey results that were collected specifically for this TDP effort;
- A listing of potential service and facility improvements, for consideration in the TDP;
- Recommended service improvements and vehicle purchases for inclusion in the TDP, with improvements identified by year; and
- Funding requirements and potential funding sources for recommended service improvements, vehicle purchases and other capital facility-related improvements.

This analysis has been based on an extensive analysis of CAT service that has included the following work efforts:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

The full analysis completed for this TDP is documented in a separate series of nine Technical Memorandums.

This TDP reflects an initial step in future service improvements for CAT. It will be important to coordinate closely with other transportation and land use planning efforts, to continue to monitor service performance, and to provide DRPT with annual updates regarding implementation of TDP service and facility improvements. Implementation of service recommendations presented in this TDP will require close coordination with Albemarle County, the University of Virginia and the Thomas Jefferson Planning District Commission.

8.1 Service Performance Monitoring

This TDP has suggested the consideration of service performance measures (in addition to the City's "P3" process) to ensure CAT service performance characteristics continue to remain strong. This TDP has also recommended the establishment of a Transit Advisory Committee. One of the first functions performed by this committee should be the establishment of service performance standards and a monitoring program that could be used for periodic service evaluation.

8.2 Annual TDP Monitoring

The DRPT will require submittal of an annual letter that provides updates to the contents of this TDP. Recommended contents of this "TDP Update" letter include:

- A summary of ridership trends for the past 12 months.
- A description of TDP goals and objectives that have been advanced over the past 12 months.
- A list of improvements (service and facility) that have been implemented in the past 12 months, including identification of those that were noted in this TDP.
- An update to the TDP's list of recommended service and facility improvements (e.g., identify service improvements that are being shifted to a new year, being eliminated, and/or being added). This update of recommended improvements should be extended one more fiscal year to maintain a six-year planning period.
- A summary of current year costs and funding sources.
- Updates to the financial plan tables presented in Chapter 7 of this TDP. These tables should be extended one more fiscal year to maintain a six-year planning period.

The financial plan is a principal objective of the TDP. It is in this chapter that an agency demonstrates its ability to provide a sustainable level of transit service over the TDP time period, including the rehabilitation and replacement of capital assets. This chapter identifies potential funding sources for annual operating and maintenance costs, and funding requirements and funding sources for bus and service vehicle purchases.

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #1: Documentation of Staff Input

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

November 2010

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This report summarizes the input received during staff interviews that were conducted between September and October 2010.

2 Staff Input Summary

CAT managers, supervisors, drivers and select administrative staff were interviewed to offer service-related feedback that could help guide CAT's TDP process. Individual meetings with CAT management and administrative staff were conducted ad hoc during the weeks of September 20th and October 4th. Interview sessions with the bus operators and supervisors were conducted in small group format on October 6th and 8th. The meetings with the bus operators and supervisors were conducted during midday and afternoon hours to ensure opportunities for afternoon drivers to comment prior to their shift and morning drivers to comment after their shift. Lunch was provided as an incentive to encourage participation. Comments received from the various interview sessions have been categorized and documented in the following section.

Administration and Management (12)

- Bus drivers have no input on vehicle specs
- CAT needs to continue to implement the recommendations of the Transit Marketing Plan through FY 2013; raise community awareness of transit services and work with the community in FY 2013 on the next marketing plan
- City Hall very reactive to complaints and requests
- Consider when and if the dialogue on regional transit needs to be re-started because travel patterns are regional the effectiveness of "local" transit is limited by default
- Consider establishing a Transit Planner position to focus on community outreach, implementation of TDP service improvements, and reviewing development proposals to ensure that transit is well-considered
- Determine whether additional resources and staff, especially mechanics, are needed to maintain the new facilities (Downtown Transit Station, Transit Headquarters, stops, shelters, and benches) and buses, especially if service increases are planned
- Good communicating from management
- Not enough fuelers to clean buses
- Seek greater funding support from UVA and business community
- Seek partnership with County and PVCC
- Should funding for the UVA fare-free photo ID program be updated? If so, how?
- Supervisors need to back up bus operators

Buses (11)

- 35’ buses are good length for system
- Customers like cleanliness of new buses
- Fleet mix is “getting there”
- Need 40’ buses
- Need bigger bus on Routes 23/24
- Need more staff vehicles
- New buses are worse than the old buses
- No fueling tradeouts are operated
- Opus buses have maintenance problems
- Small mechanical problems that do not ground a bus are an annoyance
- Usually buses are right-sized but need more trolleys

Customers and Ridership (21)

- Access to jobs is important
- All route segments are well utilized
- Consider the connections between parking policy and transit’s role in the community
- Consider ways to regularly receive public comment about transit and how transit staff can best share information with decision-makers and the community
- Determine the operating and capital costs of increasing service frequency and consider the expected ridership return, prioritize new investments in frequency
- Determine whether regular City Council meetings and/or establishing a Transit Advisory Board will improve community awareness and participation in transit discussions
- High minority population in Forest Hills
- John Paul Jones uses Routes 7 and 8
- Lots of wheelchairs at Pantops, UVA Rotunda
- Piedmont CC students feel slighted over UVA relationship
- Prioritize improvements for pedestrians and bicyclists that improve access to transit
- Riders are accustomed to shopping center penetration
- Route 1 — poor use on weekends
- Route 1A – East of Market underutilized, consider peak hours only or demand response
- Route 2A — only used in the a.m. for workers off of Locust
- Route 5 – After 8 p.m., Sam’s Club underutilized
- Routes 1 and 2 are underutilized on Saturdays
- Routes 3 and 4 have heavy ridership
- There are no unused route segments
- UVA using Route 7 more as students/staff realize passes are accepted

Facilities and Maintenance (15)

- Bus operators lounge area could be better
- Cars/delivery trucks parked at stops, snow clearing
- Consider Transit Center at old Texaco
- Determine whether and how to improve the spacing of bus stops and the amenities available at bus stops
- Drivers and passengers leave buses dirty
- DTS is excessive for what it's used for
- DTS needs to be open during all hours that buses operate, passengers wait in the cold
- Grease/oil at Fashion Square
- Great radio system
- Homeless persons are problematic at DTS
- Need bench on Avon/Elliot
- No complaints about bus shelters
- No drivers area, only drivers restroom provided
- Not enough space at Barracks Road Shopping Center, need to secure funding for a dedicated area
- Trash problems at stops; trash cans are not utilized

Safety (10)

- Barracks Road Shopping Center too tight to serve
- Challenging to drive through parking lots, motorists
- Cleveland/Jefferson Park Avenue turn is difficult to see
- Consider closing University Avenue to traffic other than transit and emergency vehicles
- Holiday Inn/KFC Stop on Route 7 problematic, limited visibility
- Left turn off Berkmar Drive needs arrow (Route 5)
- Lights on Hillsdale needed, blocked by trees
- Parking on 4th St./Main St. is problematic
- Shopping centers are a problem—accidents aren't as bad as they used to be
- Too much activity on Main street—parking, bicycles, businesses, transit, outdoor seating

Service Coverage and Routing (24)

- A lot of the routing is circuitous but most riders accept what they have
- Change Route 1B to use Avon Street Extended to connect Downtown and PVCC
- Change Route 4 to a two-sided loop by Forest Hills Park to differentiate outbound from inbound
- Change Route 6 and night Route 22 to use Bailey Road and Prospect Avenue
- Change Route 7 to travel across pedestrian mall like the FREE Trolley
- Learning curve to night routing: 3, 21, 1B and 23 do same thing
- Martha Jefferson Hospital relocating; need partnership with Albemarle County and the hospital to make revisions to Route 10
- Motorists don't know all of the access points at Walmart, creating congestion
- New Service – further north on US29 to Target, passengers currently walk or bike from last stop
- New Service – airport, Hollymead, Earlysville Rd.
- New Service – Albemarle Place opening soon, plan to use Route 8 but need partnership with Albemarle County
- New Service – Avon St. Ext. needs service for shopping and medical trips to Lakeside
- New Service – need to extend to new hospital
- New Service – new apartments behind Monticello High School
- New Service – senior citizens apartments by the Colonnades on Barracks Rd., closest to Route 5
- One-way loops are a problem
- Route 5 – need stop at Doubletree Hotel
- Route 7 – need stop inbound by apartments near mall
- Routes 7 and 8 – stop at Kroger/Gold's Gym creates too much turning
- Route 10 – stop near car wash difficult to make turn
- Route 10 – through shopping center too many pedestrians
- Shift Bailey Road and Prospect Avenue to Route 6
- Too many bus stops on Route 7 impacts on-time performance
- Trolley – consider extending route to Barracks Road Shopping Center to connect with downtown

Service Frequency and Span (20)

- Early enough, not late enough
- Need earlier service
- Need more frequency
- Need more hours downtown
- Need more Sunday service in neighborhoods
- Need more Sunday service—Pantops, Belmont, Walmart
- Need Route 2B on Locust Avenue at night.
- Perhaps night service model could operate on Sundays
- Preston St. bus (Route 8) needs to run later
- Riverside (Route 1A) needs later service
- Routes 3, 4 and 6 should operate every 30 minutes
- Route 5 should run as late as 7
- Route 7 needs to run later
- Route 7 too tight for 60-minute cycle
- Saturday service adequate
- Service span adequate
- Service starts early enough for most. Hospital could use earlier service (UVA)
- Some late night employment wants later service
- Sunday – Routes 3, 4, 5 and 10
- Sunday service is adequate but need 2 Trolleys

Transfers and Scheduling (14)

- Connectivity works well, fairly good
- Connectivity—experienced riders make it work
- Consider a transit-only lane on West Main Street to improve on-time performance
- Is the timed-pulse at the DTS the most effective means of organizing service?
- Route 10 connections are too tight due to traffic
- Route 4 is very tight, speeding is necessary
- Route 7 at night is too tight – 60 minute cycle is too tight
- Route timing has not kept up with growth
- Routes 5 and 8 have relaxed running times
- Saturday service schedules are impacted by events
- Sunday needs two trolleys to alleviate crowding and on-time performance issues
- Traffic light leaving Walmart takes too long
- Traffic on Main Street and 14th Street is bad
- Trolley run time change is problematic

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #2: Documentation of Stakeholder Input and Public Outreach

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

December 2010

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Appendix A: Public Outreach Presentation

1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This report summarizes the input received during stakeholder interviews as well as input received through two public meetings between November and December 2010.

2 Stakeholder Input

Key stakeholders, both internal and external to the City of Charlottesville, were identified within the community and interviewed for input into the TDP Study effort. The stakeholders represented a diverse panel of elected officials, planning professionals, community activists and business leaders. As such, many of the responses provided by some stakeholders directly conflict with responses provided by other stakeholders. This clearly demonstrates the challenges CAT faces when attempting to meet the varying service expectations of its clients and stakeholders.

Below is a list of the stakeholders who were interviewed, followed by a list of interview questions used in those interviews. The same 15 interview questions were asked of all of the participants. This allowed the project team to make comparisons between the various stakeholders' interests in CAT. The conclusion of this section identifies the comments received during the interview process. To encourage candid responses, participants were assured their responses would not be attributed to their name or position. Thus, the responses will be inclusive of all interviewees with no reference to the individual respondent.

Stakeholder Interview Schedule

Tuesday, December 7, 2010

2:00 p.m. Councilman Satyendra Huja, City of Charlottesville
3:00 p.m. Will Cockrell, Thomas Jefferson Planning District Commission
4:00 p.m. Vice Mayor Holly Edwards, City of Charlottesville

Wednesday, December 8, 2010

8:00 a.m. Mayor Dave Norris, City of Charlottesville
9:00 a.m. Len Schoppa, Alliance for Community Choice in Transportation
11:00 a.m. Maurice Jones, Charlottesville City Manager
1:30 p.m. Missy Creasy, Charlottesville Planning Manager
Jeanie Alexander, Charlottesville Traffic Engineer
2:30 p.m. Ron Cottrell, Martha Jefferson Hospital V.P. of Planning & Corporate Development
3:30 p.m. Donna Shaunesey, JAUNT Executive Director
5:30 p.m. Becca White, University of Virginia Director of Parking and Transportation
Julia Monteith, University of Virginia Senior Land Use Planner

Thursday, December 9, 2010

9:00 a.m. David Benish, Albemarle County Chief of Planning
10:00 a.m. Supervisor Dennis Rooker, Albemarle County *(did not attend interview)*
11:00 a.m. Supervisor Rodney Thomas, Albemarle County *(did not attend interview)*

Stakeholder Interview Questions

1. Are you (and those you represent) satisfied with existing transit service? What routes or services are not offered that you (or those you represent) would like added?
2. Are there unmet transit service needs? What are they?
3. What transit connections do you (and those you represent) believe are most important?
4. Do you (and those you represent) believe that the University of Virginia is effectively served by transit? How well does Charlottesville Area Transit work in coordination with University Transit Service? What suggestions do you have to improve service?
5. Where has the community/region grown in recent years? Where will the community grow in the future? Should transit service expanded in these areas?
6. How important is transit access to non-Charlottesville destinations for things such as employment & shopping? What are these destinations?
7. Are expanded transit services between Charlottesville and outlying communities needed? What about services between outlying communities?
8. Given that passenger fares and federal and state operating assistance cover about half of the cost of providing transit service, how should the other half of the cost be funded?
9. What is the higher priority, transit service in more areas that is less frequent OR transit service in fewer areas that is more frequent?
10. How receptive do you think the community would be to major changes in transit service?
11. What are the areas of the community with traffic congestion and/or parking issues? Should transit be enhanced in these areas?
12. Currently most passenger connections between buses (transfers) are made at the Downtown Transit Station, what other locations would work for passenger connections? Should downtown connections be shifted to these locations or should connections at these other locations be in addition to existing downtown connections?
13. Do you (and those you represent) believe there should be transit service between Charlottesville and the airport?
14. Charlottesville Area Transit currently operates fixed routes. Do you believe there are areas that could be served differently?
15. What is your top priority for transit?

Stakeholder Interview Responses

1. Are you (and those you represent) satisfied with existing transit service? What routes or services are not offered that you (or those you represent) would like added?

    - Basically, satisfied. JAUNT works as a feeder service to CAT. Transfer reciprocity between JAUNT and CAT is lacking. There are differences in their certification program.
    - CAT does a great job given the resources and parameters. Should the City give more? What would a trunk and feeder or BRT service look like to enhance the system? Need service to be fast, frequent and fare-free; more modern than the trolley between US 29 North, UVA, downtown and Pantops. There is too much internal circulation with the Trolley on the UVA campus. Need smaller neighborhood feeders and additional transfer centers.
    - CAT has made great progress. Need to attract choice riders. Improve service to UVA employees. Are we connecting low income employees to jobs? Need to resolve County vs. City politics.
    - Generally satisfied. Unsure of where the gaps are. Outpatient care center, new hospital campus will feature a bus stop at the front door and has been ensured that CAT will stop there.
    - No, transit just can't compete with the automobile. Bus schedule is uncertain. Weather is a deterrent to riding. Transit needs dedicated right-of-way and improved traffic engineering to compete and make trips faster.
    - No. Customer service, cleanliness, scheduling and hiring all leave room for improvement. Need better partnership with Albemarle County. Routes are still designed for a segregated populace.
    - The community has invested strongly in and is supportive of CAT. However, frequencies are insufficient to attract choice riders; sixty-minutes is impractical. Neighborhoods have good coverage. County coverage is lacking – North US 29, Pantops, PVCC.
    - The Trolley and Route 7 provide great connections to UVA. Route 5 should travel further south to UVA. There is good staff interaction between CAT and UTS. Buses need to be spaced better. Belmont needs to be directly connected with UVA. Express routes are needed on US 29.
    - The Trolley is a good experience. Frequency is good but on-time performance is challenged during the rush hour.
    - Yes and no. Buses are dirty. Drivers should make an effort to pick-up trash. Prefer small buses but know they have difficulty with steep hills.
    - Yes. CAT delivers to the County the service that is asked of them.

2. Are there unmet transit service needs? What are they?

    - Albemarle County, UVA, US 29, Crozet. Need service to meet 24-hour employment centers such as hospitals and hotels. Service needs to be more functional for employment.
    - County needs are unmet – Pantops, US 29, Crozet.
    - Hollymead, airport area, NGIC, south and west of Charlottesville, Mill Creek, North Ridge Medical Center, Boars Head Inn, commuter express to Crozet, Zion's Crossroads. Increased frequency and night service, particularly to Pantops and Martha Jefferson Hospital.
    - Huge unmet market of choice riders along North US 29.
    - Need more frequent service to allow flexibility.
    - Most riders are happy based on 2009 Transit Survey. The City has good coverage. Most have access.
    - The biggest needs and opportunities are in the County. Need a more robust park & ride program to eliminate downtown's "Two-Hour Shuffle".
    - Unmet needs are in the County.
    - Unmet service needs are in the County. Employment and housing are not connected. The system is not regional.
    - Yes, expand service to Rio Road, Stonehenge Townhouses.

3. What transit connections do you (and those you represent) believe are most important?

    - Airport to UVA to downtown.
    - Downtown to UVA, US 29 to Fashion Square, downtown to Barracks Road.
    - Downtown to West Main Street to UVA; low income neighborhoods to jobs; neighborhoods to shopping, US 29, Barracks Road, Pantops, southern Albemarle County.
    - Downtown Transit Station is important but need similar hubs at Barracks Road and Walmart.
    - DTS to UVA, downtown to Fashion Square, Martha Jefferson Hospital and PVCC.
    - Martha Jefferson Hospital needs connections to lower income housing for workers.
    - North US 29, Pantops, Main Street (UVA to downtown). Access to employment, sustenance, healthcare, shopping, connections to Martha Jefferson Hospital are critical. Direct connection between Pantops, UVA and US 29 is needed.
    - US 29 to Charlottesville to Pantops.
    - US 29 to UVA to downtown
    - UVA (for job access) and shopping
    - UVA, downtown, Pantops and US 29 for employment and shopping.

4. Do you (and those you represent) believe that the University of Virginia is effectively served by transit? How well does Charlottesville Area Transit work in coordination with University Transit Service? What suggestions do you have to improve service?

    - Moves students effectively. Great success in moving students around the City via Trolley. Need to attract choice riders who work at UVA.
    - UTS should be part of CAT to take advantage of economies of scale. Would create less confusion and better subsidies of CAT. There is some coordination but should be more. Students do not use the schedule book.
    - UVA is pretty much well served for City access. CAT works fairly well with UVA. The fare reciprocal agreement has its weak spots. CAT coordinates well with JAUNT.
    - UVA is served pretty well. Peak events seem to be managed well. Appear to coordinate well. Doctors and employees in the Health Service Foundation have asked for service. Need service to Fontaine Research Park.
    - UVA is served pretty well. There isn't a need to connect UVA to the new Martha Jefferson campus.
    - UVA is served well by UTS. There is much better coordination with CAT than there used to be.
    - UVA is very well served, perhaps over-served. Not much programmatic coordination. The reciprocal pass agreement hasn't been in effect long. Merging systems would make sense if charter service issues could be resolved.
    - UVA students are served well however, the employees aren't. The working relationship between CAT and UVA is graded a "B". Transit spans need to match employment hours.
    - Why are there two systems? Regardless, there is good coordination between the City and UTS.
    - Yes, CAT and UVA work pretty well together, particularly through the pass program. Coordination between CAT and UTS appears minimal.
    - Yes, especially by the Trolley. Route 7 is also effective. There is more potential in work trips. The health system has the densest population. The schedule book, GPS arrival system, reciprocal ridership agreement are all examples of good partnering. CAT needs to implement a swipe-capable farebox, more data sharing, safety, training and bus washing to improve on this partnership.

5. Where has the community/region grown in recent years? Where will the community grow in the future? Should transit service be expanded in these areas?

    - Future growth on North US 29, Pantops, Crozet, southern Albemarle County, downtown, UVA area, West Main Street.
    - New neighborhood off of Ridge Street, Belmont, Cherry Avenue, Fry Springs, downtown. Future public housing in Westhaven, South 1st Street, 6th Street (southeast), Riverside, Willie Mills, Mickey Drive (near K-Mart).
    - North US 29, Hollymead, Pantops.
    - North US 29, Mill Creek (Avon Street Extended), Glenmoor, Crozet.
    - North US 29, South Albemarle County, Charlottesville population has not changed in 20 years while county population has doubled. Transit should expand in the county but the county should fund it.
    - Pantops (lack of road infrastructure), North US 29, Hollymead, downtown is on the edge of booming. County should fund expansion into the non-city areas.
    - The region has grown all over! Downtown, south of downtown, southeast (Belmont), North US 29, Pantops, Crozet. Possibility for transit service but densities aren't quite there yet. JAUNT currently serves them. The park & ride at Zion's Crossroads is usually full.
    - US 29 and Pantops have seen the most growth and have the greatest capacity for redevelopment. Military base near Hollymead. Crozet is projected to grow to 15,000-18,000 residents from its current 5,000. Harris Teeter would make a good park & ride.
    - US 29, Greene County, Fluvanna County, Nelson County, Waynesboro County, Crozet, Johnson Village, Cherry Hill. Yes, all have the potential for transit.
    - US 29, Pantops, Crozet. Should consider commuter express service.
    - US 29, West US 250, East US 250, Monticello.

6. How important is transit access to non-Charlottesville destinations for things such as employment & shopping? What are these destinations?

    - Important for job access.
    - Important. This is where the job growth has occurred.
    - It's important.
    - Louisa County has some potential.
    - Pretty important. Most of the retail centers are in the County along US 29.
    - Very important but not really practical.
    - Very important to access Martha Jefferson Hospital for jobs.
    - Very important. Lots of employment and shopping.
    - Very important. Need access to the Super Walmart in Greene County.
    - Very important. There is a larger potential for commuter trips.

7. Are expanded transit services between Charlottesville and outlying communities needed? What about services between outlying communities?

    - Commuter service from Crozet in long-term.
    - Crozet and North Fork.
    - Greene County Transit serves its community well and should connect to Charlottesville.
    - Greene County, Walmart Distribution Center in Louisa County.
    - In the long range – Greene County and Zion's Crossroads.
    - JAUNT currently meets this need very well.
    - JAUNT serves that role. State Farm has a vibrant vanpool program. UVA draws from all over.
    - Yes, between Culpepper and Charlottesville.
    - Yes.

8. Given that passenger fares and federal and state operating assistance cover about half of the cost of providing transit service, how should the other half of the cost be funded?

    - All partners need to step up. Need opportunity for referendum.
    - Aspire to be fare-free. Local dollars should support transit.
    - Gas tax, parking fees.
    - General funds.
    - General revenue, sales tax, payroll tax, some sort of taxing mechanism, possible increase in fare.
    - Jurisdictions should pay their own way. The RTA approach is desired.
    - Local funding but needs to be thought through regionally.
    - Local government through general revenue.
    - State should add funding, gas tax, local government.
    - The consumers (riders) need to pay the difference.
    - The current funding mechanisms are adequate.

9. What is the higher priority, transit service in more areas that is less frequent OR transit service in fewer areas that is more frequent?

    - Better quality service where demand is strongest. Trunk and feeder service may take more resources but how much more?
    - Fewer areas, more frequent.
    - Less frequency to fewer areas.
    - More coverage, less frequency.
    - More frequency to fewer areas.
    - More frequency, less coverage but lacks political support.
    - More frequent service in the most productive areas.
    - More frequent service. Need Trolley to Northridge and new Martha Jefferson Hospital. Extend Trolley to Belmont.
    - More frequent, less coverage.
    - Transit service in more areas that is less frequent. But service should be accessible by making it more streamlined, less customized. Customers can walk a few blocks. Pedestrian amenities are getting better but there is room to improve.

10. How receptive do you think the community would be to major changes in transit service?

- Community would be divided. Choice riders would welcome change. Core users/transit reliant would be resistant. Strong marketing would be needed.
- Community would be receptive.
- Community would be resistant to change.
- Depends on how you do it. Transit dependent community would be sensitive. Choice riders would be more open. Reliability and frequency would sell it.
- Depends on the impacts.
- Nobody likes change but TDP should make the case and provide reasonable explanations.
- Not very well. The community isn't very flexible.
- One-third would oppose, one-third would embrace and one-third would be indifferent.
- Resistant. Change is tough.
- The City is not serious about supporting change. CAT's placement in the City's organizational structure suggests it is not a high priority.
- There would be some resistance initially but they would get used to it. Marketing and image would be critical.

11. What are the areas of the community with traffic congestion and/or parking issues? Should transit be enhanced in these areas?

    - Downtown, US 29, US 250, Freebridge, Route 20, Monticello to Avon and Route 53.
    - Downtown, West Main Street, UVA.
    - Parking and congestion problematic in the university area, The Corner and West Main Street.
    - Parking downtown is an issue. For congestion, Pantops. US 29 has improved. Charlottesville's traffic peaks are very constrained (two hours daily). West Main Street is difficult for bicyclists.
    - There are no parking problems downtown. Traffic congestion is primarily on Main Street, US 29 (between US 29 and Hydraulic) and Pantops.
    - There is too much free parking downtown.
    - Traffic - Pantops, US 29, Main & McIntyre, downtown Mall area. Parking - downtown.
    - Traffic - US 29, Hydraulic, Bypass at McIntyre, Pantops, Cherry Avenue. Parking - UVA hospital, JPA. Transit is already available in these areas.
    - US 29, East US 250, West US 250, Bypass area. There are no significant parking issues.
    - US 29, Emmett & Ivy, Emmett & Hydraulic, Market Street, West Main Street, McIntyre, Pantops. Lack of free parking is the perceived problem.
    - US 29, Pantops, East US 250. Parking in downtown and UVA is available but it isn't cheap.
    - US 29/Emmett Street between Seminole Square, US 250 and Hydraulic, McIntyre Road, Park Street, Pantops, Fontaine/JPA, West Main Street, Cherry Avenue, High Street, Monticello Road. Parking at UVA and downtown are only problematic due to the cost.

12. Currently most passenger connections between buses (transfers) are made at the Downtown Transit Station, what other locations would work for passenger connections? Should downtown connections be shifted to these locations or should connections at these other locations be in addition to existing downtown connections?

    - Barracks Road or John Paul Jones (open space).
    - Barracks Road Shopping Center could work better. UTS would be amenable to sharing transfer locations on UVA campus.
    - Barracks Road, Fashion Square.
    - Barracks Road, Fashion Square. The DTS is inadequate.
    - Barracks Road, Walmart, Martha Jefferson Hospital/Pantops.
    - Connections should be made at cross-streets where routes intersect. More shelters should be added in these locations to accommodate.
    - Main Street near the Amtrak Station. The current DTS location is awkward.
    - Pantops, North US 29, Barracks Road, West Main Street.
    - UVA area

13. Do you (and those you represent) believe there should be transit service between Charlottesville and the airport?

    - Don't see the need for airport service.
    - It would be a nice option but unsure if it would be utilized.
    - Maybe, but is it practical with luggage?
    - Probably not cost-effective.
    - Service to the airport would be great. There would be fierce competition with the taxis.
    - Taxi service is expensive (approximately $25), but there are not enough flights to justify regular bus service.
    - The business community says yes but the airport has been silent. Service might be warranted but there is a risk of underutilization.
    - Yes, maybe on demand.
    - Yes.

14. Charlottesville Area Transit currently operates fixed routes. Do you believe there are areas that could be served differently?

    - Demand-response, point-route deviation types of service in less dense areas. CAT should invest in software to support.
    - Fixed-route service would be best.
    - Flex zone or point-route deviation would make good pilot programs.
    - JAUNT fills that niche.
    - North Charlottesville should be served by on-demand or point-route deviation service.
    - On-demand service via cell phone.
    - On-demand.
    - On-demand. Hollymead is a potential flex zone.
    - Some flex service is currently offered.
    - Unsure.
    - Yes. Demand-response or vanpool (commuter oriented service)

15. What is your top priority for transit?

    - "Connect the dots". Service to Hollymead. More frequency.
    - Continue to maintain staff and visitor access to Martha Jefferson Hospital. Shifts are generally 7:00 a.m.-3:30 p.m., 3:00 p.m.-11:00 p.m. and 11:00 p.m.-7:00 a.m. Weekend service is needed too.
    - Establishment of an RTA or equivalent. Enhance the existing County routes, shelters and sidewalks.
    - Fast, frequent and fare-free. Improve or maintain service for riders with no alternative. Make service attractive to choice riders.
    - Improve headways and reliability.
    - Make service more available for the senior community.
    - More frequency on existing routes. Queue jumping, bus re-entry law to improve travel speeds. Bike connections.
    - Provide a reliable service, especially to non-choice riders, that is clean and friendly. Increase frequency. Improve regional service that is fairly funded.
    - Serve the work trip better and take more single-vehicle commuter trips off the road.
    - Service should be completely restructured with more frequency. Improve dependability.
    - Transform CAT to meet the needs of a diverse population.

3 Public Outreach

An important part of the TDP is to reach a broad constituency within the community to solicit input on routes, schedules and service types. This will ensure that the community is involved, given ample opportunity to provide input, and made aware that their issues have been heard and understood.

To achieve these goals, two (2) public meetings were held at strategic locations throughout the TDP study area. This included Monday, November 1st at the TJPDC's Water Street Center in downtown Charlottesville from 4 to 6 p.m.; and Wednesday, November 3rd at the Jefferson Area Board for Aging (JABA) from 4 to 6 p.m. Both meetings were accessible by public transit. The public meetings were advertised on-board all CAT buses (see Figure 3-1) as well as the CAT website. Print advertisements were published in the *The Daily Progress*, *C-VILLE* and *The Hook* and a press release announcing the meetings was sent to all local media outlets.

Figure 3-1

On-Board Bus Card Announcement

Charlottesville Area Transit
is seeking public input for its
2012-2017 Transit Development Plan
CAT
charlottesville area transit
Join the conversation
IN COOPERATION WITH
DRPT
Share your ideas and thoughts on
current and future public transit
in Charlottesville
Monday, November 1, 2010
4:00 - 6:00 pm
TJPDC Water Street Center
407 E. Water St.
Accessible by all CAT routes except Route 5
Wednesday, November 3, 2010
4:00 - 6:00 pm
Jefferson Area Board for Aging (JABA)
674 Hillsdale Dr., Suite 9
Accessible by CAT Route 7

There were eight attendees at the TJPDC meeting including two members of CAT staff and one representative from the TJBDC. The meeting at JABA had ten attendees. Of those, one was a CAT staff member, another was from TJPDC and a third represented Albemarle County.

The community meetings started with a formal presentation (see Appendix A) that outlined the purpose of the TDP and the tasks involved. The schedule for both projects was also presented. The presentation closed with suggestions for the types of input that was being solicited ("What's on your mind?"). The meetings then transitioned to a round-table format, giving the public ample opporunity to interact and ask informal questions. Participants were encouraged to offer ideas and thoughts regarding their perceived strengths, weaknesses and future needs of the CAT system.

The following pages summarize the comments obtained during the public meetings:

CAT Public Input Meeting
November 1, 2010
TJPDC Water Street Center, 407 E. Water St., Charlottesville, VA

In Attendance

Darryl T. Williams, dtw2u@virginia.edu
Chiara Canti (C-VILLE Weekly) chiara@c-ville.com
Will Cockrell (TJPDC) wcockrell@aol.com
Jerry Deily, godeily@aol.com
Bobby Burke
Eberhard Jehle, evjehle@gmail.com
Bill Watterson (CAT)
Nancy Arens Rudel (CAT)

1. Failure of buses staying on schedule in case of mishaps throughout day—rerouting problems (catching up) especially with Route 7 and Trolley.
2. Bus upkeep – maintenance of buses (ie: engine failure)—should have a backup van for stranded passengers. Have a crew of maintenance staff to maintain newer fleet of buses.
3. Driver backups on hand to provide reliefs in case of problems.
4. With respect to LRTP – routes don't seem to have permanence—perception of outside management exerting too much control *(VDRPT)*
5. With respect to the planning process – perception the planning process is flawed—that the plan is already in place and there doesn't need to be a public input meeting.
6. On-board surveyors not surveying a broad enough spectrum of riders, both currently and in the past.
7. With respect to On-Time Performance – UVA is area's largest employer. Medical center employers are more stringent about arrival times. All buses have GPS/AVL technologies. Routes 2, 7, 10; bunching of trolleys. Stop GPS numbers only provide the schedule info instead of current on-time and upcoming information. About 75% of Bus Finders do not work such as at the CVS and McDonald's. Problems with tracking. Greenbriar neighborhood has inaccurate phone numbers. Problems are with the details. Need to have comment phone number for contracted services.
8. Scheduling interaction between UTS and CAT fairly good.
9. With respect to JAUNT – future problems may arise. May have to connect with National Ground Training Institute; connections with Monticello, Belmont area (higher blind population). Group homes scattered about. Workforce housing.

10. Possible circular route on Preston Avenue to UVA, downtown. Helping out Route 9 (Rose Hill Dr., high school direct service). Loops in two directions. Hub and spoke forming out of an oval around downtown.
11. Loop service (2A Locust Avenue, Park Avenue) – Needs smaller headways of 20-30 minutes otherwise it's a long haul.
12. Possible on-demand service on some routes based on Bus Finder-sourced demand.
13. Service Times: Sunday evening needs to run until after dark in summer (about 6:00 to 8:00 p.m.). Possible addition of two to three buses to keep Route 7 on time. There's a perception of buses deadheading needlessly back downtown.
14. Fares are pretty good. Monthly passes are good. JAUNT riders like the monthly pass, day passes. Need to try to have more outreach about these passes.
15. Smoking within 25ft of DTS entrances is problematic. Need to have better clean-up procedures and an alternate place for smokers.
16. Pick-up Policy – What extent is needed to hail buses to avoid missing them?
17. With respect to bus stop placement/spacing – they're either too far or too close on Route 10.
18. Deviations into shopping centers – currently very helpful especially for ADA passengers. *(Seemed to have a consensus on this issue)*.
19. Express service – would need to survey outlying areas to gauge perception and willingness to fund. Would need county-city support.
20. County-city parochialism – don't work well together. Need to have more funding support across lines.
21. Meadow Creek Parkway area – Any current plans for transit? There's an elderly population out there.
22. Regional Transit Authority – The 2009 legislative sessions allowed for a county-city planning authority, however there wasn't a referendum for a SPLOST funding mechanism. Public outreach would help. TJPDC MPO facilitated the regional transit coordination between county and city.
23. Route numbers on rear of the bus are helpful.
24. "Holding Patterns" – buses circling downtown in holding patterns leads to confusion and long wait times.
25. Bicycle lanes and parking – perception of problem with addition of bicycle facilities on W. Main. Some confusion as to legal rights of bicyclists. Need better public education.

CAT Public Input Meeting
November 3, 2010
JABA, 674 Hillsdale Dr., Charlottesville, VA

In Attendance

Chuck St. Clair
Rosemary Balister, rosemarybalister@hotmail.com
Judy Walton Lynch, judlync@yahoo.com
David Benish (Albemarle Co.)
Will Cockrell (TJPDC), wcockrell@aol.com
Kathy Welch, kwelch34@comcast.net
Joyce Hillstrom (ACCT Board Member), 434-295-4045
Bruce Odell (CHART, city member), cvilleodell@gmail.com
Josh Stokes, djjosh5@aol.com
Nancy Arens Rudel (CAT)

1. On-Time Performance issues with Route 7. Really like the service. Can catch a Greyhound bus via Route 7.
2. Bus stop Route 5 Colonades – bus stop/shelter is on the sidewalk, blocking sidewalk. Riders live in Georgetown West. There's no lighting along this area. People walk parallel to traffic in the road. Very poor pedestrian conditions in the area. Barracks Road/Georgetown area. Need to have a bus stop at Georgetown Rd. near the residential places (apartments). Sometimes the bus driver will willingly drop passengers off at the intersection of Barracks/Georgetown so they don't have to walk as far.
3. Large refugee population – what is going on in terms of outreach to their needs? Commons is a hot spot for them. Also Blue Ridge Apartments.
4. Bus Finders contact information missing. Is automated but outdated. Doesn't work sometimes. Great service when it does work. Is a stop-by-stop problem. Problems at CVS, Fashion Square (blocked by building), Health Department. Need more maintenance – overall problem with phone numbers and maintenance.
5. Incorporate an app for CAT – need more advertising or notice about Google Transit service for trip planning, apps for mobile devices. There's an app that a UVA student developed *(HoosBus)*.
6. Hours – DTS closes at 8pm, should be open from beginning to end of service.
7. Service frequency not high enough especially in neighborhoods. Need greater frequency on a spine. From Pantops through downtown up North US 29. Use JAUNT, taxis, other CAT buses on a feeder system. Nodal network will probably need exogenous pressures to increase ridership (higher parking rates, less parking availability,

high density downtown, longer hours, higher frequencies, etc.). On-demand routes feed into a trunk line.

8. Display cases at DTS provide a very nice showcase of history.
9. Obsolete signs on buses and in buildings around town. Need to have better maintenance so there's more turnover and people will actually read them.
10. Public input – need more opportunities for feedback.
11. Rivana Trail – good coordination with CAT Routes 5 and 7. Can be made better.
12. Fares – make the bus free. Tack on a 75¢ subsidy somehow. Should raise property taxes, gas taxes, something. Should try a six month trial period to see how it works.
13. Infrastructure – Albemarle County is realizing that improvements though sidewalks, bikeways, transit have smaller incremental costs and are usually able to be implemented faster. Road improvements, by comparison, have exorbitant costs, difficult to finance, have higher incremental costs. Only a few key road projects are getting built.
14. Police should patrol late at night when people are waiting for the bus.
15. Hours – need to have late night Route 2B from 10:30 p.m. until 12:00 a.m. There's no service on Sunday besides the 7 and Trolley. Need something like four to five routes running. HRT (Hampton Roads) provides Sunday and holiday service. (Harrisonburg is possibly a peer city.) Need to have all day service until late. CAT won't run on federal holidays (is a problem currently).
16. Advertising – advertising in the CAT Rider Guide could be a revenue source.

Appendix A
Public Outreach Presentation

Charlottesville Area Transit - Transit Development Plan

Public Outreach
November 1st & 3rd, 2010

What is a Transit Development Plan?

- A Transit Development Plan is a Short-Range Plan that:
  - Presents agency goals and objectives
  - Provides an assessment of existing service characteristics
  - Identifies near-term service and facility needs
  - Presents a schedule for funding and implementing new services and facilities

What is a Transit Development Plan?

- Commonwealth (DRPT) requires a TDP as a condition for state funding
- TDP to be used by DRPT for state-level programming and planning
- Provides Commonwealth with a basis to include agency programs in the Statewide Transportation Improvement Program
- Commonwealth is providing technical assistance to smaller agencies

What is a Transit Development Plan?

- Deeper, more comprehensive review of service, equipment and facilities needs
- Detailed analysis of trip-level and stop-level ridership data
- Emphasis on improved efficiencies and cost effectiveness
- Seeks cost-feasible transit expansion opportunities

How Does it Work?

- Staff Input
  - CAT Management and Staff
  - CAT Bus Operators
  - TJPDC Staff
- Public Involvement
  - Stakeholder Outreach
  - Public Meetings
  - Project Advisory Committee

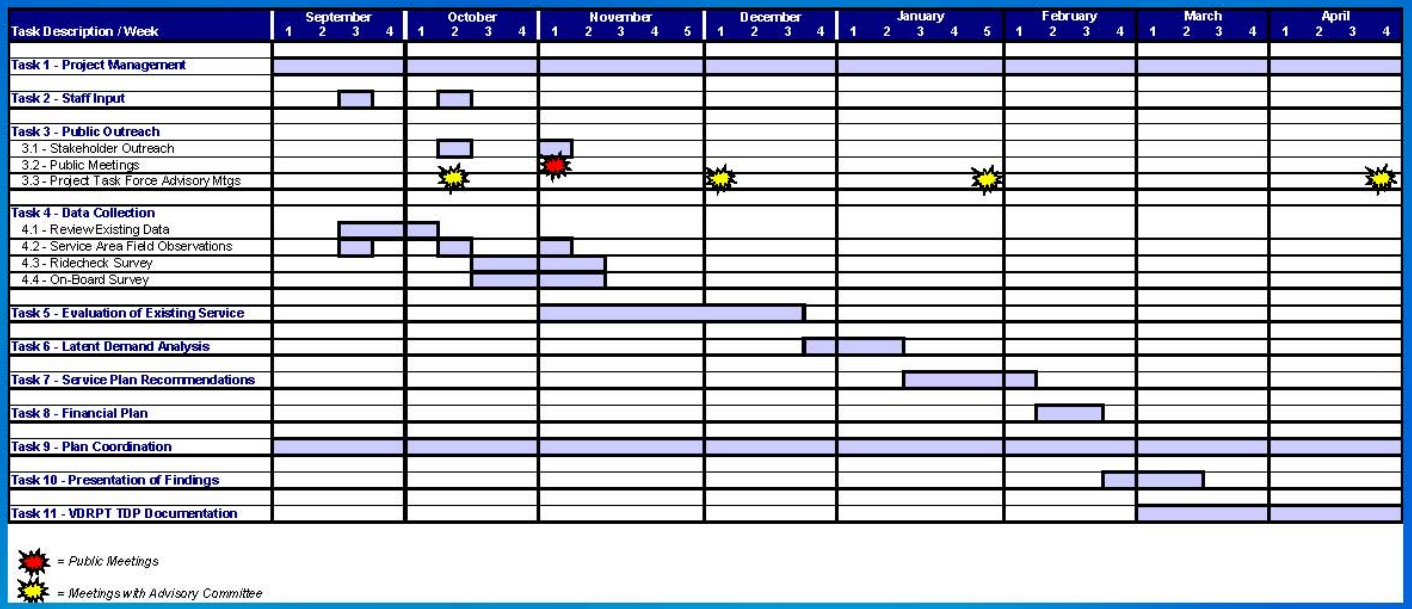
How Does it Work?

- Data Collection
  - Review of Existing Data
  - Field Observations
  - Ridecheck Survey
  - On-Board Survey
- Data Analysis and Evaluation of Existing Service
  - System-Level Analysis
  - Route-Level Analysis/Route Profiles
  - Peer Agency Review

How Does it Work?

- Latent Demand Analysis
- Service Recommendations
  - Near-Term (1-3 Years)
  - Short-Range (4-6 Years)
  - Long-Range (2035)
- Financial Plan
- Presentation of Findings
- VDRPT TDP Documentation

What's the Schedule?


Task Description / Week
September 1 2 3 4
October 1 2 3 4
November 1 2 3 4 5
December 1 2 3 4
January 1 2 3 4 5
February 1 2 3 4
March 1 2 3 4
April 1 2 3 4
Task 1 - Project Management
Task 2 - Staff Input
Task 3 - Public Outreach
3.1 - Stakeholder Outreach
3.2 - Public Meetings
3.3 - Project Task Force Advisory Mtgs
Task 4 - Data Collection
4.1 - Review Existing Data
4.2 - Service Area Field Observations
4.3 - Ridecheck Survey
4.4 - On-Board Survey
Task 5 - Evaluation of Existing Service
Task 6 - Latent Demand Analysis
Task 7 - Service Plan Recommendations
Task 8 - Financial Plan
Task 9 - Plan Coordination
Task 10 - Presentation of Findings
Task 11 - VDRPT TDP Documentation
= Public Meetings
= Meetings with Advisory Committee

What's Happening This Week?

- System Ridecheck
  - October 29-November 3 + November 6
- On-Board Survey
  - November 4-5
- Public Input Sessions
  - Monday, November 1 – TJPDC Water Street Center
  - Wednesday, November 3 – JABA (Hillside Drive)

What's On Your Mind?

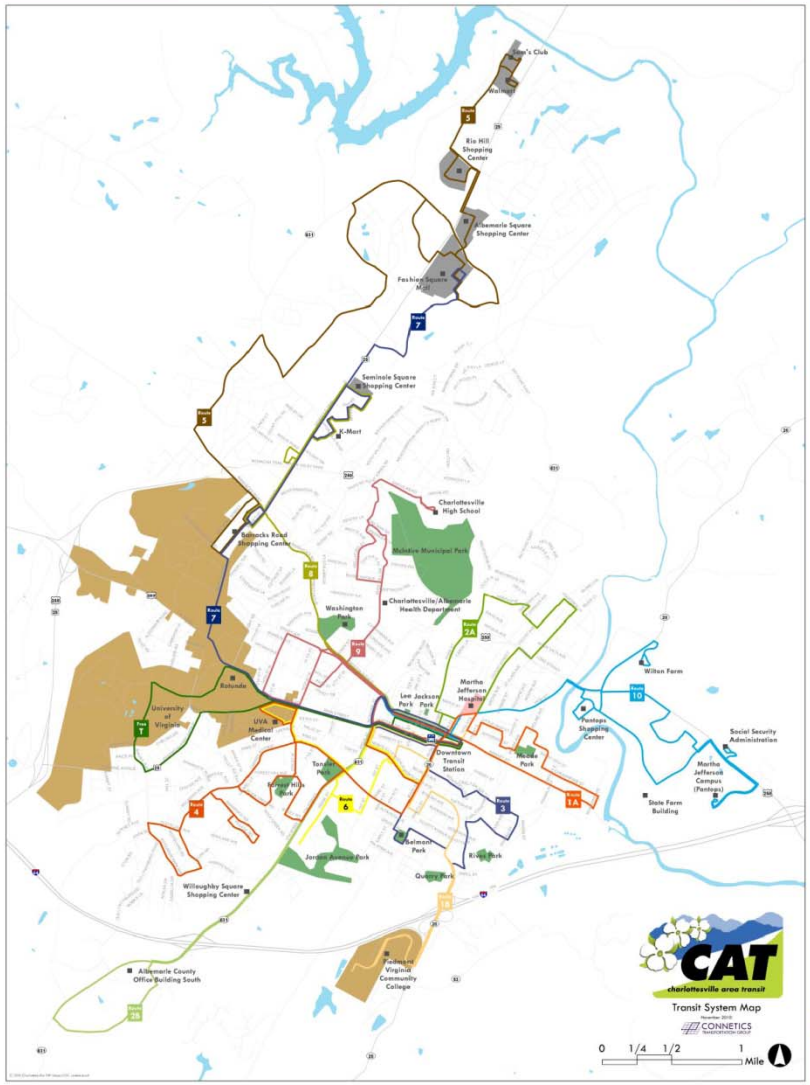
- Perspective on Existing Service
  - Areas Served and Unserved
  - Directness of Routing
  - Service Frequencies
  - Service Days and Times
  - Connectivity with Other Routes
  - Coordination with UTS and JAUNT
  - Fares
  - Other Items?

Additional Thoughts?

Glen Waters
Connetics Transportation Group
Phone – 678-461-0969 x11
Email – gwaters@conneticsgroup.com

Thank You for Participating!

CAT System Map



Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #4: Ridecheck Survey Results

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

December 2010

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This report summarizes the ridecheck survey conducted between October 30th and November 6th, 2010.

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2 Methodology

As part of an expanded TDP, the VDRPT contracted to have a ridecheck survey conducted on all of CAT's weekday, Saturday, and Sunday fixed-route service. The objective of the ridecheck survey was to compile boarding and alighting information by bus stop and by trip for all routes for weekday and weekend service. On-time performance was also compiled at major time points of each route. Various summaries depicting detailed and aggregated information were developed for use in evaluating the effectiveness and efficiency of the existing service.

For the ridecheck, there were approximately 300 service hours surveyed. The preparation for the ridecheck was done over the six weeks leading up to the ridecheck from mid-September through October. Connetics Transportation Group (CTG) staff met with CAT Operations staff to identify any unique characteristics to the service that may prove challenging to the scheduling process. Headway sheets were developed for each service day (weekday, Saturday and Sunday) in the absence of any systemwide blocking schematics. Given the traffic and ridership impacts to CAT during major University of Virginia events, ridecheck dates were selected to avoid home football weekends. As such, the ridecheck was scheduled for Saturday, October 30th through Tuesday, November 2nd plus Saturday, November 6th. Wednesday, November 3rd was identified for make-up trips if needed. While Saturday October 30th was a home football date, Route 7 and the Trolley were not surveyed on this date. Instead, these routes were reserved for November 6th when there was no game.

There are currently several methods utilized to collect ridecheck information. These are generally categorized into automatic passenger collection, hand held units, and the manual method. The manual method was used to collect the information for the ridecheck survey. This method basically consisted of preparing "surveyor packets" for a surveyor to tabulate boardings, alightings, and arrival times at timepoints. The surveyor attached the packet to a clipboard and recorded the information as he/she rode the bus. The information was then keyed into a database, edited and summarized.

The surveys were conducted by CTG. Temporary surveyors were hired through Adams and Garth Staffing and Executive Search in Charlottesville.

2.1 Ridecheck Survey Preparation

The preparation for the ridecheck survey consisted of several tasks. These included preparing the survey packets for use in the survey, scheduling the pieces of work to be surveyed each day, and hiring and training the surveyors.

The survey was set up to examine routes by block, where a block is defined as the time a vehicle starts its in-service time until the time the vehicle ends its in-service day. A survey packet(s) was developed for each block; in some cases, a packet for the morning half and a packet for the afternoon/evening half of the day.

The survey packet consisted of two basic forms. The first sheet defined the trips to be surveyed for a given piece of work. This sheet defined the start and end times of the piece of work; the location where

the work starts and ends; the route, run and block numbers; and the route, direction and trip start time for each trip to be surveyed.

The second type of form in the survey packet was the ridecheck form (see Figure 2-10). There was a separate ridecheck form included for each trip to be surveyed. This form contained all bus stops for the route sequenced in the order of travel. The surveyor recorded the boardings and alightings at the appropriate location each time the bus stopped. The scheduled time was pre-entered at the time points. The surveyor recorded the actual time the bus arrived at these timepoints.

Pertinent information defining each piece of work was entered into a spreadsheet for the purpose of scheduling the pieces. Initially all the pieces of work were scheduled into separate dates. The resulting schedules by date were used by the survey supervisor during the conduct of the survey. Schedules by surveyor were given to each of the permanent surveyors, so that they could arrange for the appropriate report and end time each day. The master schedule was updated each day to accommodate missed and/or extra pieces of work. The survey packets were grouped by scheduled ridecheck date, boxed, and transported to Charlottesville for distribution during the week.

At the outset of the project, 25 surveyors were hired and trained. Adams and Garth recruited and screened the surveyors based on basic skills criteria provided by CTG at the time of contracting. CTG supervisors trained the surveyors on October 29th. Training consisted of a one-hour classroom orientation which outlined surveyor roles, responsibilities and expectations. Accuracy and attentiveness were emphasized to ensure a quality product. After the classroom session, all surveyors were placed on-board a Route 5 bus to complete a mock ridecheck. Doing so allowed the surveyors to experience the job firsthand and gave supervisors the opportunity to gauge the workers' skills. The on-board exercise lasted approximately two hours.

Upon initiation of the ridecheck, CTG supervisors were on-hand throughout the ridecheck October 30th through November 3rd. A supervisor from PBS&J provided support during the November 6th portion of the ridecheck. In addition to the on-site supervisor, two extra surveyors were scheduled each day to fill any unexpected absenteeism and minimize missed trips.

Despite those contingencies, there were still instances where trips were missed due to late pull-outs, vehicle failures, staffing emergencies or other anomalies. Table 2-1 provides a listing of total and surveyed trips by route and by day of service. All weekday trips were successfully surveyed. On Saturday, 9%of the day's trips were missed. The most significant impact of these losses was Routes 21 and 22 which missed half of their trips. All other missed trips represented a much smaller loss out of the total for that route. Fortunately, trips previous to and following the missed trips were successfully surveyed; thus for this analysis, similar ridership characteristics and on-time performance can be assumed to have occurred. On Sunday, only two trips were missed out of the entire service day.

Figure 2.1
Sample Ridecheck Form for 9:45 am trip of Route 6

CAT 2010 Ridecheck Survey		CHECKER NAME:					
		Wkdy	Scheduled for:			BLOCK:	
Route 6 Ridge, UVA & Downtown	Stop ID#	Time			Passengers		
		Scheduled	Actual	Difference	OFF	ON	LOAD
					Already on Board:		0
Downtown Transit Station	17333	**9:45 AM**	9:44 AM	**-1.00**		4	4
Water Street at 3rd Street	11015						4
Water Street at Omni Hotel	11036					2	6
Crescent Halls	16013	**9:49 AM**	9:48 AM	**-1.00**	1	2	7
1st Street at Oakwood Cemetery	14069						7
1st Street at Elliott Avenue	14292						7
1st Street at Lankford Avenue	14318					3	10
Lankford Avenue at Ridge Street	14263	**9:52 AM**	9:52 AM	**0.00**			10
Ridge Street at Hartman's Mill Road	14007						10
Ridge Street at Raymond Road	14048						10
Brookwood Lane at Brookwood Drive	17643					1	11
Ridge Street at Brookwood Drive	14076						11
Ridge Street at Raymond Road	14082						11
Ridge Street at Barksdale Street	14216				1		10
Cherry Avenue at 5th Street	15894						10
Cherry Avenue at Independent Resource Center	15904				2		8
UVA Hospital Lee Street	16701	**10:00 AM**	10:00 AM	**0.00**	1		7
West Main Street at 11th Street	11138				2	1	6
Cherry Avenue Shopping Center	11585						6
Cherry Avenue at 6th Street	12113						6
Ridge Street at Elliott Avenue	15802						6
Ridge Street at Dice Street	15818						6
Monticello Avenue at 2nd Street	14237						6
Monticello Avenue at 6th Street	14228	**10:07 AM**	10:06 AM	**-1.00**			6
Av Street at Belmont Avenue	12010						6
Av Street at Fox's Café	12075						6
10th Street at Water Street	11321						6
Downtown Transit Station	17333	**10:15 AM**	10:10 AM	**-5.00**	4		
					Remaining on Board:		2

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Table 2-1
Summary of Charlottesville Area Transit
Ridecheck Survey Percent of Trips Surveyed

Route	Weekday			Saturday			Sunday		
	Total Trips	Missed Trips	Percent Surveyed	Total Trips	Missed Trips	Percent Surveyed	Total Trips	Missed Trips	Percent Surveyed
1A	13	0	100%	13	0	100%	--	--	--
1B	12	0	100%	12	0	100%	--	--	--
2A	13	0	100%	13	0	100%	--	--	--
2B	12	0	100%	12	0	100%	--	--	--
3	20	0	100%	13	0	100%	--	--	--
4	21	0	100%	12	1	92%	--	--	--
5	63	0	100%	63	0	100%	--	--	--
6	19	0	100%	12	0	100%	--	--	--
7	119	0	100%	119	12	90%	42	2	95%
8	19	0	100%	12	0	100%	--	--	--
9	12	0	100%	12	0	100%	--	--	--
10	13	0	100%	13	0	100%	--	--	--
21	10	0	100%	10	5	50%	--	--	--
22	10	0	100%	10	5	50%	--	--	--
23	5	0	100%	5	0	100%	--	--	--
24	5	0	100%	5	1	80%	--	--	--
Trolley	68	0	100%	68	6	91%	16	0	100%
	434	0	**100%**	404	30	**91%**	58	2	**98%**

2.2 Survey Processing

After the survey, completed survey forms were shipped to CTG's office in Roswell. The ridecheck forms were edited to eliminate or correct any obvious errors which were not caught by the supervisors. The ridecheck forms were then entered into to a series of Excel spreadsheets. Subsequently, the spreadsheets were organized by route and then processed through various editing programs. Minor adjustments to the files were made as required. After all the files were edited, the files were merged into three master files – one for weekday, Saturday and Sunday service. Summaries were created that listed trips by route and trip start time. These summaries were compared to the public timetables to ensure that all trips were surveyed.

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3 Survey Results

The ridecheck master files were summarized into six Excel worksheet reports. These reports are as follows:

- Route Totals;
- Max Load Summaries by Trip and Route;
- Boardings, Alightings, and Loads by Trip by Route;
- Aggregated Boardings, Alightings, and Total Activity and Load by Route;
- On-Time Performance by Route; and
- On-Time Performance Time Point Comparisons by Trip.

A separate CD contains files with CAT ridecheck survey results. Following are summaries of ridecheck counts by route. Additional summaries will be provided in *Technical Memorandum 5 – Existing Service Evaluation and Route Profiles*.

Table 3-1
Summary of Charlottesville Area Transit
Weekday Ridecheck Survey Counts

Route	Boardings	Alightings	Totals	Percent of Total
1A	87	81	168	1.1%
1B	154	160	314	2.0%
2A	68	67	135	0.9%
2B	169	170	339	2.2%
3	243	235	478	3.1%
4	359	359	718	4.6%
5	705	705	1,410	9.1%
6	207	215	422	2.7%
7	2,444	2,445	4,889	31.5%
8	274	274	548	3.5%
9	156	156	312	2.0%
10	267	267	534	3.4%
21	42	42	84	0.5%
22	83	83	166	1.1%
23	23	23	46	0.3%
24	12	12	24	0.2%
Trolley	2,468	2,471	4,939	31.8%
Total	**7,761**	**7,765**	**15,526**	**100.0%**

Note: Partial trip surveyed for 5:15 pm of Route 10.

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Table 3-2
Summary of Charlottesville Area Transit
Saturday Ridecheck Survey Counts

Route	Boardings	Alightings	Totals	Percent of Total
1A	53	46	99	0.8%
1B	25	34	59	0.4%
2A	43	38	81	0.6%
2B	105	110	215	1.6%
3	169	160	329	2.5%
4	125	125	250	1.9%
5	759	760	1,519	11.6%
6	93	102	195	1.5%
7	2,011	1,988	3,999	30.4%
8	163	163	326	2.5%
9	85	85	170	1.3%
10	229	229	458	3.5%
21	21	19	40	0.3%
22	25	27	52	0.4%
23	9	10	19	0.1%
24	18	17	35	0.3%
Trolley	2,658	2,644	5,302	40.3%
Total	**6,591**	**6,557**	**13,148**	**100%**

Table 3-3
Summary of Charlottesville Area Transit
Sunday Ridecheck Survey Counts

Route	Boardings	Alightings	Totals	Percent of Total
7	649	649	1,298	47.6%
Trolley	714	714	1,428	52.4%
Total	**1,363**	**1,363**	**2,726**	**100%**

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Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #4: On-Board Survey Methodology and Results

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

January 2010

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This report summarizes the on-board survey conducted on November 4th and 5th, 2010.

2 Methodology

As part of an expanded TDP, the VDRPT contracted to have an on-board survey conducted on all of CAT's weekday fixed-route service. The objective of the on-board survey was to document passenger demographic information and trip-making characteristics for all routes for weekday service. Various summaries depicting detailed and aggregated information were developed for use in evaluating the effectiveness and perception of the existing service.

For the on-board survey, there were approximately 150 service hours surveyed. The preparation for the on-board survey was done over the six weeks leading up to the survey effort from mid-September through October. Connetics Transportation Group (CTG) staff met with CAT operations staff to identify any unique characteristics to the service that may prove challenging to the scheduling process. Additionally, CAT senior staff lent input for the survey instrument used during the survey effort. The on-board survey was scheduled for Thursday, November 4th and Friday, November 5th.

While on-board, the surveyor distributed surveys as he or she rode, and then collected them when passengers had completed entering as much information as possible. Surveyors were encouraged to distribute as many surveys as manageable, ensuring that the forms could be collected prior to the passenger departing. Once collected, the information was then entered into a database, edited and summarized.

The surveys were conducted by CTG. Temporary surveyors were hired through Adams and Garth Staffing and Executive Search in Charlottesville.

2.1 On-Board Survey Preparation

The preparation for the on-board survey consisted of several tasks. These included preparing the survey packets for use in the survey, scheduling the routes to be surveyed each day, and hiring and training the surveyors.

The survey was set up to be administered by route to ensure coverage throughout the CAT system. At a minimum, each route had one bus surveyed for a 12-hour span. Since Routes 5 and 7 operate more buses and carry a significant percentage of CAT's riders, two buses were scheduled to be surveyed at 12 hours each during the survey period. On Thursday, November 4th, routes were surveyed from approximately 6:15 a.m. until 12:15 p.m. On Friday, November 5th, routes were surveyed from approximately 12:45 p.m. until 6:45 p.m. Evening routes (Routes 21, 22, 23 and 24) were not surveyed as it is assumed riders on these buses would have had the opportunity to complete a survey earlier in the day.

Pertinent information defining each work shift was entered into a spreadsheet for the purpose of scheduling the surveyors. The resulting schedules by date were used by the survey supervisor during the conduct of the survey. Schedules by surveyor were given to each of the permanent surveyors, so that they could arrange for the appropriate report and end time each day. Survey packets were grouped by scheduled ridecheck date, boxed, and transported to Charlottesville for distribution during the week.

2.2 Survey Implementation

At the outset of the project, 25 surveyors were hired and trained. Adams and Garth recruited and screened the surveyors based on basic skills criteria provided by CTG at the time of contracting. CTG supervisors trained the surveyors on October 29th. Training consisted of a one-hour classroom orientation which outlined surveyor roles, responsibilities and expectations. Accuracy and attentiveness were emphasized to ensure a quality product.

Upon initiation of the on-board survey, PBS&J supervisors were on-hand throughout the survey effort November 4th and 5th. In addition to the on-site supervisor, two extra surveyors were scheduled each day to fill any unexpected absenteeism and minimize missed trips.

The bus trips to be surveyed were divided into surveyor work assignments. A control sheet was prepared for each day, defining the assignment and having space for surveyors to record survey instrument serial numbers by periods within the day. Each weekday route was divided into morning trips and afternoon trips with the division occurring between noon and 1:00 p.m. Morning blocks were scheduled on Thursday and evening blocks were scheduled on Friday. All surveyed trips originated at either the Downtown Transit Station or Barracks Road Shopping Center. No scheduled trips were missing during the on-board survey effort.

The survey packet consisted of two basic forms. The first sheet defined the trips to be surveyed for a given work assignment. This sheet defined the start and end times of each assignment; the location where the work started and ended; the route, run and block numbers; and the route direction and trip start time for each trip to be surveyed.

The second type of form in the survey packet was the on-board survey (see Figure 2.1). Each surveyor had 75 forms to distribute to riders. Time and route number was recorded on the forms as a means of tracking the survey inventory. Additionally, each on-board survey form had a unique serial number.

The survey instrument consisted of three sections. The first section asked the respondent to “tell us how you use Charlottesville Area Transit”. There were questions pertaining to trip purpose, trip origin and destination locations, fare payment, and transfers. The second section asked the respondent to “tell us about yourself”. There were questions pertaining to affiliation with the University of Virginia; number of household vehicles; and respondent’s age, gender, household income and typical transit usage. The third section asked respondents to rate CAT in eleven areas, such as courtesy of drivers or availability of information. On-board surveys were printed double-sided, with one side in English and the reverse in Spanish. Figure 2-1 presents the English version of the onboard survey instrument.

Figure 2.1
On-Board Survey Instrument

☐ *El cuestionario está impreso en español al reverso.*

Please tell us how you use Charlottesville Area Transit (circle or write in):

1. What is the main purpose of your bus trip today? *(choose one)*
(1) Work (2) College (3) K-12 School
(4) Shopping (5) Medical Appt. (6) Social Services
(7) Personal Business (8) Social or Recreation (9) Other _____

2. Starting Place:

_____
Street Address or Nearby Intersection
(I.e. 123 Main St. or Main St. & 1st Ave.)

_____
Nearest Building/Landmark (i.e. UVA Hospital)

3. Ending Place:

_____
Street Address or Nearby Intersection
(I.e. 123 Main St. or Main St. & 1st Ave.)

_____
Nearest Building/Landmark (i.e. Fashion Square)

4. Why did you choose to ride CAT today? *(circle all that apply)*
(1) To save time (2) Only transportation available to me
(3) To avoid having to park (4) To save money on driving costs
(5) To avoid driving in traffic (6) More convenient than driving
(7) Better for the environment (8) My employer provides a subsidy

5. How did you pay your bus fare today?
(1) Cash (2) Ticket (3) Day Pass (4) Monthly Pass (5) UVA ID
(6) City ID (7) CHS ID (8) JAUNT Pass (9) Paratransit Pass

6. Did you connect from another route (CAT, UTS or JAUNT) prior to riding this bus? 1 YES 2 NO

7. If so, what route(s)? _____

8. Will you be connecting to another route (CAT, UTS or JAUNT) to get to your final destination? 1 YES 2 NO

9. If so, what route(s)? _____

Please tell us about yourself (circle or write in):

10. Are you affiliated with the University of Virginia? 1 YES 2 NO
If YES, are you? (1) Student (2) Staff (3) Faculty

11. During the past seven days, which days have you ridden CAT?
(Circle all that apply)
(1) Mon (2) Tue (3) Wed (4) Thu (5) Fri (6) Sat (7) Sun

12. In what year did you begin riding CAT? 2006 2007 2008 2009 2010
Before 2006 _____ ☐ This is my first time riding CAT

13. A year from now, do you expect to: (1) Keep using CAT
(2) Get a car and stop using CAT (3) Stop using CAT for other reasons

14. From which one of these do you most often get information about CAT?
(1) Rider's Guide (2) Information posted at bus stop (3) Call CAT
(4) CAT website (5) Ask a driver (6) Other _____

15. In the past 30 days, roughly how many times did you use CAT's website?
_____ times ☐ Have not used the website

16. How well do you speak the English language?
(1) Very Well (2) Well (3) Not Well (4) Not at All

17. I am: (1) Male (2) Female

18. My age is:
(1) Under 16 (2) 16-24 (3) 25-34 (4) 35-44
(5) 45-54 (6) 55-64 (7) 65 or Over

19. How many live in your household (including yourself)?
1 2 3 4 5 or more

20. How many vehicles are in your household?
0 1 2 3 4 or more

21. Do you have a valid driver's license? 1 YES 2 NO

22. My households total annual income is:
(1) Under $10,000 (2) $10,000-$19,999
(3) $20,000-$34,999 (4) $35,000-$49,999
(5) $50,000-$74,999 (6) $75,000 or more

Staff Use Only
Route #_____ Time _____ am/pm Serial #_____

Please rate the following service characteristics:

In the past thirty days, how would you rate CAT on the following factors?	Excellent			Very poor	Don't Know	*... In the past thirty days have you had a problem with this?*	
23. On-time arrival of bus	5	4	3	2	1	DK	Y N
24. Frequency of CAT bus service	5	4	3	2	1	DK	Y N
25. Cleanliness of CAT stops	5	4	3	2	1	DK	Y N
26. Information at bus stops	5	4	3	2	1	DK	Y N
27. Areas that are served by CAT routes	5	4	3	2	1	DK	Y N
28. Hours of CAT service	5	4	3	2	1	DK	Y N
29. Courtesy of CAT drivers	5	4	3	2	1	DK	Y N
30. Reliability of connections between routes	5	4	3	2	1	DK	Y N
31. Directness of CAT routes	5	4	3	2	1	DK	Y N
32. CAT Website	5	4	3	2	1	DK	Y N
33. CAT Rider's Guide	5	4	3	2	1	DK	Y N
34. OVERALL, how do you rate CAT?	5	4	3	2	1	DK	Y N

35. Would you recommend riding CAT to a friend or coworker?
1 YES 2 NO

36. Willing to be part of a focus group? Want CAT updates? How do we reach you?
Name *(please print)*:
_____
Phone # OR e-mail address:
_____

Please return this form to the surveyor on this bus. THANK YOU!

2.3 Survey Processing

After the survey, completed survey forms were shipped to CTG's office in Roswell. The on-board survey forms were organized by route and then entered into an Excel spreadsheet. The on-board survey data were edited to eliminate or correct any obvious errors which were not caught by the supervisors during the survey effort.

A survey expansion factor was calculated by dividing the average daily ridership from September 2010 for the routes being surveyed by the number of completed survey forms for those routes. This expansion factor was used to provide a more accurate distribution of survey results by route.

The boarding origin and alighting destination addresses included in each record were geocoded using the online tool, www.batchgeo.com. Significant manual work was included in the geocoding process. This work included rationalizing various addresses and converting landmark information to addresses able to be geocoded.

3 Survey Results

The on-board survey data were summarized into a single Excel workbook. The workbook was divided into a series of summarizations which further organized the raw data entered from the forms.

After corrections to erroneous data and removing forms that could not be interpreted, CAT riders completed 836 survey forms that were entered into the on-board survey master file. For each question with specific response choices, the original (unfactored) data were tabulated by the chosen response and relevant percentages were calculated. For questions with multiple responses, the data was stratified and recoded to gain insight into the different choices and was likewise tabulated. Next, the number of survey forms received for each route was factored by the known daily ridership for that route so that the sample responses received were expanded in a properly weighted manner to represent all of CAT's riders on the respective routes. The tabulated responses are summarized below in subsection 3.1. For the open-ended questions regarding trip starting and ending locations (Questions 2 and 3), addresses were obtained for known locations and the results were geocoded. Summaries of the geographic response data are presented in subsection 3.2. Along with this Technical Memorandum, an electronic copy of the Excel workbook containing all of the collected data has been provided.

Rider Profile

Overall, the onboard survey data suggest that CAT's bus system ridership is heavily influenced by socio-economic characteristics and transit dependence. Pertinent rider characteristics are as follows:

- Riders use CAT for a variety of reasons but home-to-work-related travel is over 43% of overall travel purposes. There is also a significant amount of college-related travel (16%) on CAT with 51% claiming some sort of affiliation with the University of Virginia.
- CAT has a stable base of regular riders, with 86% indicating they ride at least once a week and 41% riding at least two days a week. Additionally, 77% claim they will continue to use CAT next year with about 25% claiming to have begun riding CAT this year.
- The largest majority (32%) of CAT's ridership base falls in the category of 16 to 24 years old, with 60% between 16 and 34.
- 37% of CAT's riders have no vehicle at home and 43% also indicated they have no driver's license. Additionally, 45% cite CAT as their only mode of transport.
- 32% of CAT's ridership reported an average household income of less than $10,000 and 24% report an average household income in the range of $20,000 and $34,999.

Overall, riders have a positive perception of CAT's service characteristics, rating all criteria between "very good" and "good".

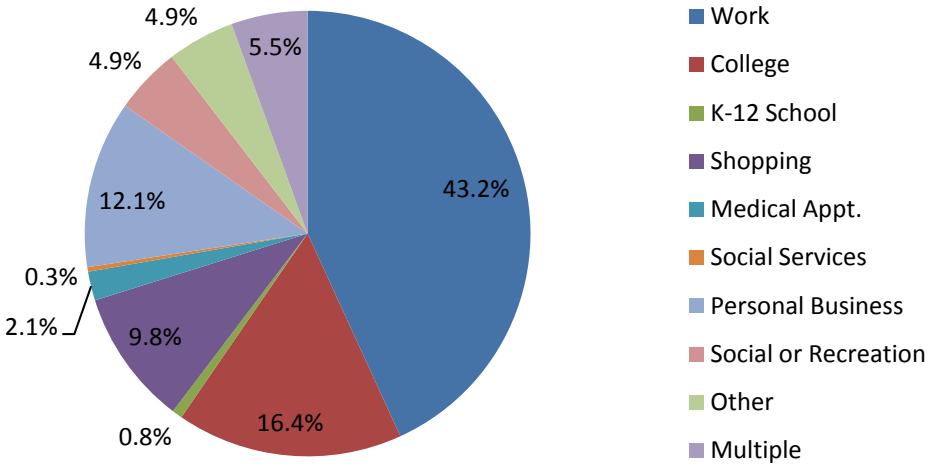
3.1 Survey Tabulations

Following are tabulated responses (unfactored and factored) for each question that did not have an open-ended response. For those questions with multiple responses, further post analysis is included below it. Graphs illustrate the factored response rates for each question.

Question 1: What is the main purpose of your trip today?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Work	361	43.2%	45.0%	3,131	41.2%	43.2%
College	96	11.5%	12.0%	1,191	15.7%	16.4%
K-12 School	15	1.8%	1.9%	55	0.7%	0.8%
Shopping	88	10.5%	11.0%	712	9.4%	9.8%
Medical Appt.	24	2.9%	3.0%	152	2.0%	2.1%
Social Services	5	0.6%	0.6%	24	0.3%	0.3%
Personal Business	98	11.7%	12.2%	880	11.6%	12.1%
Social or Recreation	34	4.1%	4.2%	352	4.6%	4.9%
Other	35	4.2%	4.4%	355	4.7%	4.9%
Multiple	46	5.5%	5.7%	401	5.3%	5.5%
No Response	34	4.1%	n/a	347	4.6%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Analysis of factored responses show that 43.2% of respondents cited their trip as work-related, while over 16% of respondents cited their trip was college-related. Personal business was cited as the third highest reason for riding.



Question 2: Starting Place

Respondents were asked to provide an address, cross-street or landmark indicating the origin of their trip. Analysis of the responses will be provided in subsection 3.2.

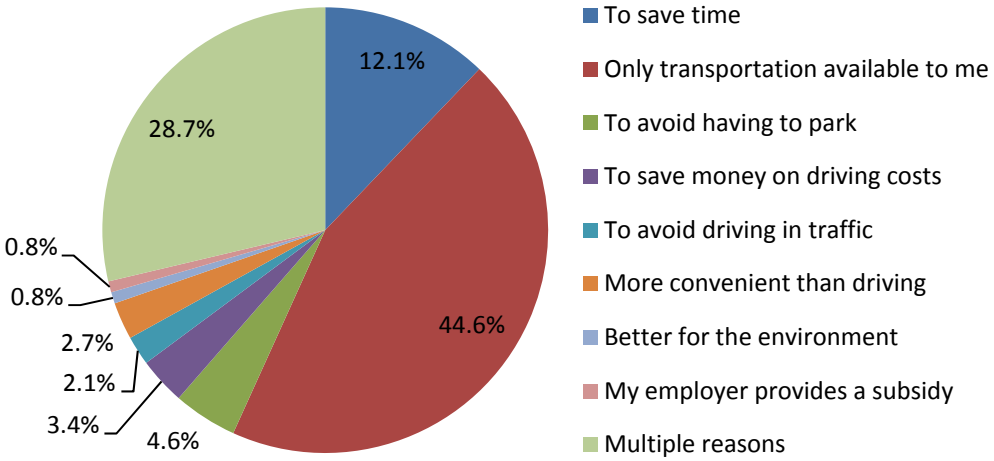
Question 3: Ending Place

Respondents were asked to provide an address, cross-street or landmark indicating the destination of their trip. Analysis of the responses will be provided in subsection 3.2.

Question 4: Why did you choose to ride CAT today? (Circle all that apply)

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
To save time	75	9.0%	9.4%	883	11.6%	12.1%
Only transportation available to me	389	46.5%	48.7%	3,245	42.7%	44.6%
To avoid having to park	37	4.4%	4.6%	338	4.4%	4.6%
To save money on driving costs	34	4.1%	4.3%	249	3.3%	3.4%
To avoid driving in traffic	13	1.6%	1.6%	155	2.0%	2.1%
More convenient than driving	28	3.3%	3.5%	197	2.6%	2.7%
Better for the environment	10	1.2%	1.3%	60	0.8%	0.8%
My employer provides a subsidy	6	0.7%	0.8%	59	0.8%	0.8%
Multiple reasons	207	24.8%	25.9%	2,086	27.4%	28.7%
No Response	37	4.4%	n/a	330	4.3%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

For a single response, nearly 45% of respondents cited CAT as the only transportation option available to them. Two or more reasons were given by almost 29% of respondents.



Of the previous multiple responses:

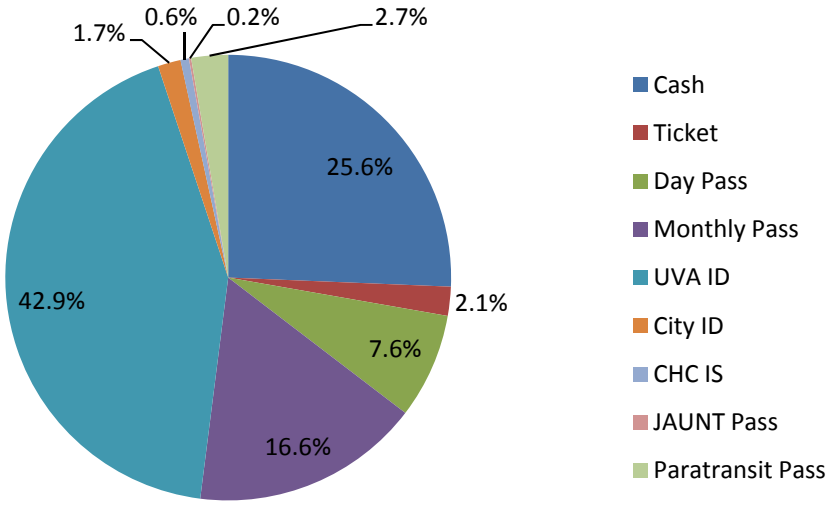
	Unfactored			*Factored*		
Response	**# of Resp.**	**% of Total**	**% of Resp.**	**# of Resp.**	**% of Total**	**% of Resp.**
To save time	84	6.6%	12.4%	909	7.5%	13.2%
Only transportation available to me	70	5.5%	10.3%	632	5.2%	9.2%
To avoid having to park	107	8.4%	15.8%	1,125	9.3%	16.3%
To save money on driving costs	111	8.7%	16.3%	1,079	8.9%	15.6%
To avoid driving in traffic	72	5.7%	10.6%	742	6.1%	10.8%
More convenient than driving	82	6.5%	12.1%	900	7.5%	13.1%
Better for the environment	113	8.9%	16.6%	1,115	9.2%	16.2%
My employer provides a subsidy	40	3.1%	5.9%	395	3.3%	5.7%
Previous responses	592	46.6%	n/a	5,184	42.9%	n/a
Total	1,271	100.0%	100.0%	12,080	100.0%	100.0%

"Avoiding parking" (16.3%), "lower environmental footprint" (16.2%) and "saving money on driving costs" (15.6%) were the most frequent reasons cited by 207 respondents within the previous multiple categories. "Saving time" and "more convenient" made up over 26% of other combinations.

Question 5: How did you pay for your bus fare today?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Cash	230	27.5%	30.1%	1,691	22.3%	25.6%
Ticket	20	2.4%	2.6%	139	1.8%	2.1%
Day Pass	64	7.7%	8.4%	503	6.6%	7.6%
Monthly Pass	134	16.0%	17.5%	1,097	14.4%	16.6%
UVA ID	263	31.5%	34.4%	2,829	37.2%	42.9%
City ID	13	1.6%	1.7%	109	1.4%	1.7%
CHC IS	13	1.6%	1.7%	41	0.5%	0.6%
JAUNT Pass	3	0.4%	0.4%	10	0.1%	0.2%
Paratransit Pass	25	3.0%	3.3%	176	2.3%	2.7%
No Response	71	8.5%	n/a	1,006	13.2%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Almost 43% of respondents used their University of Virginia identification to board a CAT bus. This coincides with Question 10 where nearly 51% of respondents were affiliated with the University. Over a quarter of respondents paid cash on board and nearly another quarter used either a day or monthly pass.



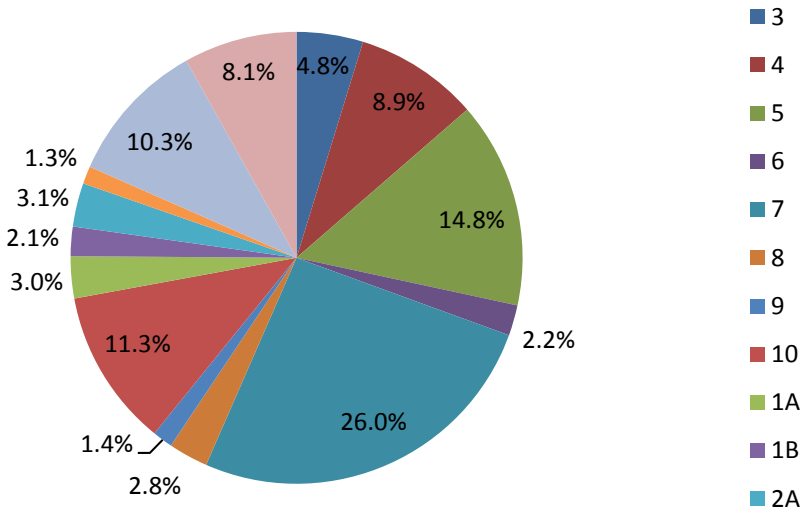
Question 6: Did you connect from another route (CAT, UTS or JAUNT) prior to riding this bus?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Yes	205	24.5%	25.5%	1,742	22.9%	23.9%
No	600	71.8%	74.5%	5,546	73.0%	76.1%
No Response	31	3.7%	n/a	313	4.1%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Nearly a quarter of respondents connected from another bus before being surveyed. Route 7 (26%), Route 5 (14.8%) and Route 10 (11.3) had the most connections.

Question 7: If so, what route(s)?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
3	5	0.6%	3.3%	60	0.8%	4.8%
4	11	1.3%	7.3%	113	1.5%	8.9%
5	18	2.2%	12.0%	187	2.5%	14.8%
6	4	0.5%	2.7%	28	0.4%	2.2%
7	52	6.2%	34.7%	330	4.3%	26.0%
8	5	0.6%	3.3%	36	0.5%	2.8%
9	4	0.5%	2.7%	18	0.2%	1.4%
10	12	1.4%	8.0%	143	1.9%	11.3%
1A	3	0.4%	2.0%	38	0.5%	3.0%
1B	3	0.4%	2.0%	27	0.4%	2.1%
2A	3	0.4%	2.0%	40	0.5%	3.1%
2B	3	0.4%	2.0%	16	0.2%	1.3%
Multiple	15	1.8%	10.0%	130	1.7%	10.3%
Trolley	12	1.4%	8.0%	103	1.4%	8.1%
No Response	686	82.1%	n/a	6,333	83.3%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%



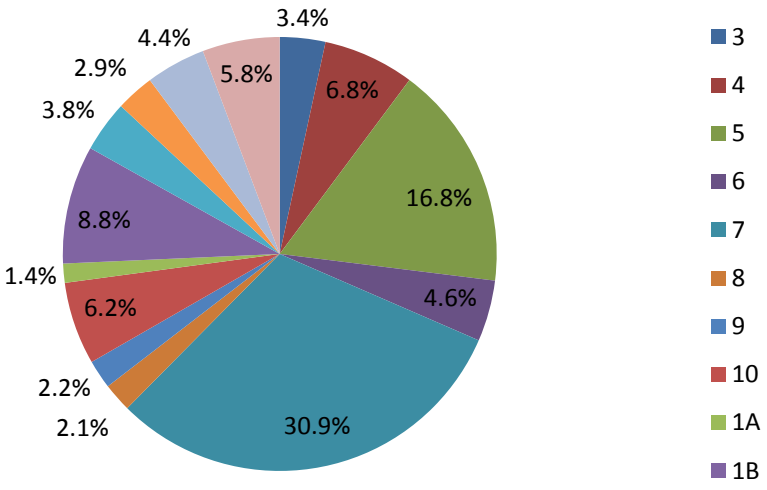
Question 8: Will you be connecting to another route (CAT, UTS, JAUNT) to get to your final destination?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Yes	248	29.7%	31.1%	1,810	23.8%	25.0%
No	550	65.8%	68.9%	5,435	71.5%	75.0%
No Response	38	4.5%	n/a	356	4.7%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Another quarter of respondents eventually transferred to another route after being surveyed. Routes 7 (30.9%), 5 (16.8%) and 1B (8.8%) had the most connections.

Question 9: If so, what route(s)?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
3	7	0.8%	3.5%	49	0.6%	3.4%
4	14	1.7%	7.0%	99	1.3%	6.8%
5	27	3.2%	13.5%	243	3.2%	16.8%
6	9	1.1%	4.5%	66	0.9%	4.6%
7	75	9.0%	37.5%	448	5.9%	30.9%
8	7	0.8%	3.5%	31	0.4%	2.1%
9	6	0.7%	3.0%	31	0.4%	2.2%
10	10	1.2%	5.0%	89	1.2%	6.2%
1A	2	0.2%	1.0%	21	0.3%	1.4%
1B	10	1.2%	5.0%	128	1.7%	8.8%
2A	4	0.5%	2.0%	55	0.7%	3.8%
2B	6	0.7%	3.0%	42	0.5%	2.9%
Multiple	12	1.4%	6.0%	64	0.8%	4.4%
Trolley	11	1.3%	5.5%	84	1.1%	5.8%
No Response	636	76.1%	n/a	6,150	80.9%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%



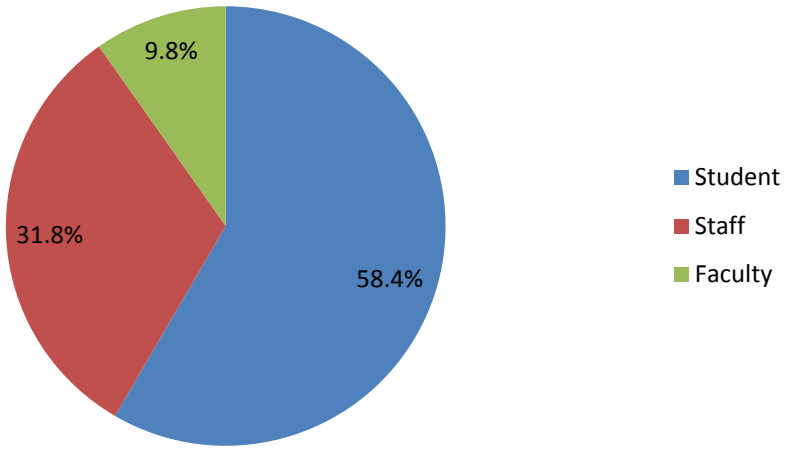
Question 10: Are you affiliated with the University of Virginia?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Yes	343	41.0%	42.9%	3,674	48.3%	50.6%
No	456	54.5%	57.1%	3,587	47.2%	49.4%
No Response	37	4.4%	n/a	340	4.5%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Question 10a: If YES, are you:

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Student	140	16.7%	48.3%	1,887	24.8%	58.4%
Staff	117	14.0%	40.3%	1,028	13.5%	31.8%
Faculty	33	3.9%	11.4%	316	4.2%	9.8%
No Response	546	65.3%	n/a	4,369	57.5%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

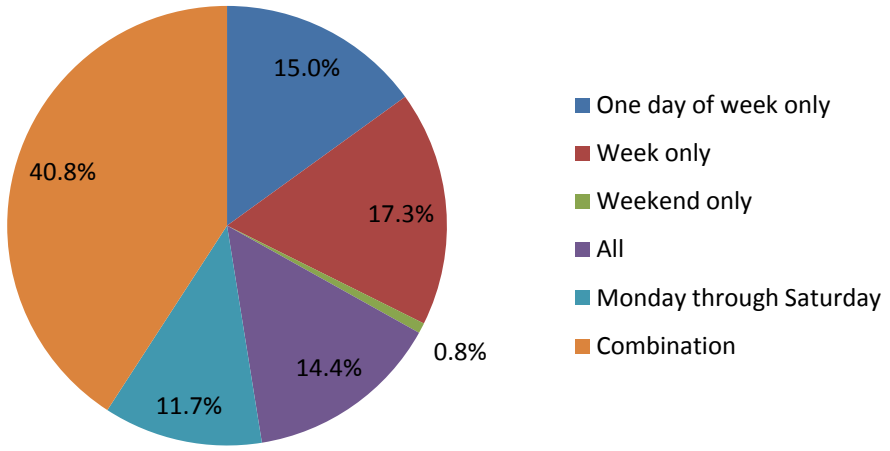
Of the 51% of respondents citing University of Virginia affiliation, the majority (58%) are students, followed by faculty at 32%.



Question 11: During the past seven days, which days have you ridden CAT? (Circle all that apply)

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
One day of week only	109	13.0%	14.8%	982	12.9%	15.0%
Week only	127	15.2%	17.2%	1,130	14.9%	17.3%
Weekend only	5	0.6%	0.7%	49	0.7%	0.8%
All	102	12.2%	13.8%	938	12.3%	14.4%
Monday through Saturday	105	12.6%	14.2%	764	10.1%	11.7%
Combination	289	34.6%	39.2%	2,667	35.1%	40.8%
No Response	99	11.8%	n/a	1,071	14.1%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

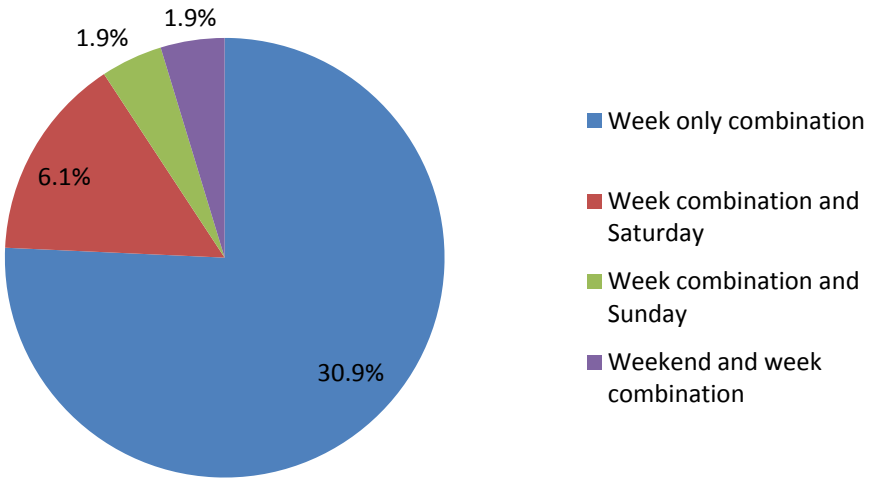
The majority of respondents rode a combination of days. Week-only riders comprised 17% of all respondents while single-weekday respondents topped at 15%.



Of the previous combinations, what are those?

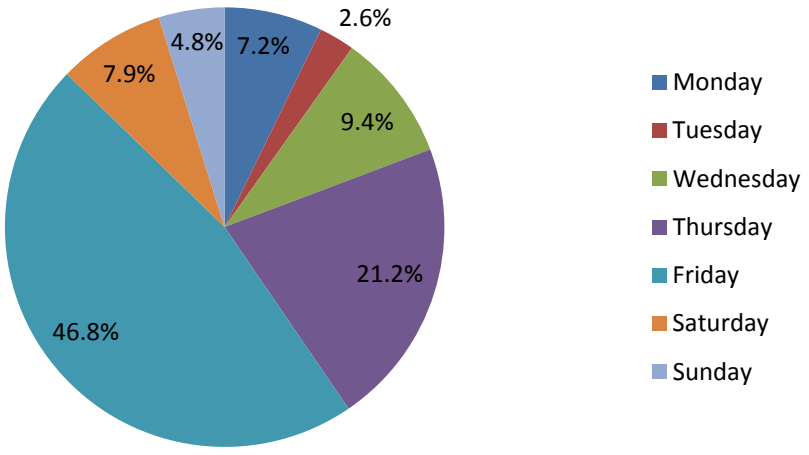
	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Week only combination	218	26.1%	29.6%	2,019	26.6%	30.9%
Week combination and Saturday	45	5.4%	6.1%	401	5.3%	6.1%
Week combination and Sunday	12	1.4%	1.6%	121	1.6%	1.9%
Weekend and week combination	14	1.7%	1.9%	126	1.7%	1.9%
Previous combinations	448	53.6%	60.8%	3,863	50.8%	59.2%
No response	99	11.8%	n/a	1,071	14.1%	n/a
Total	836	100.0%	100.0%	7601	100.0%	100.0%

Of the 2,667 factored respondents who rode a combination of days, 2,019 (27%) rode only a combination of days between Monday and Friday. Far fewer respondents rode a combination of weekday and weekend day. Of the 15% riding for a single day, the majority only rode on Friday or Thursday.



Of the response "one day of week only", what day is that?

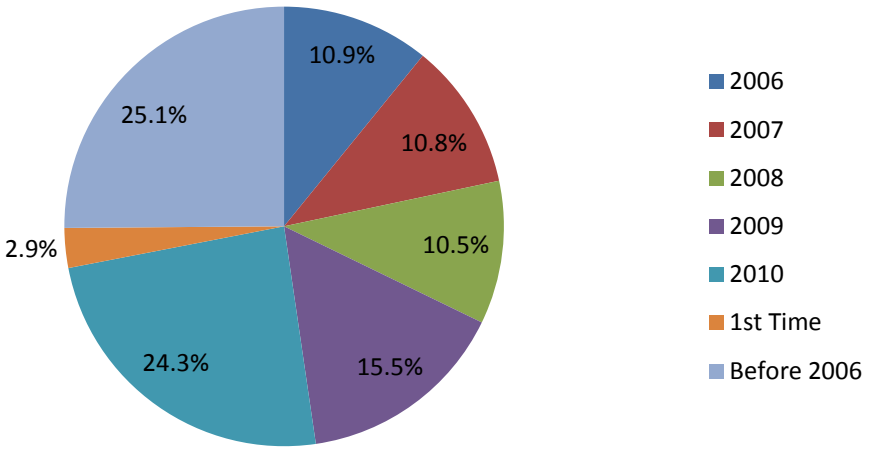
	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Monday	8	1.0%	7.3%	71	0.9%	7.2%
Tuesday	3	0.4%	2.8%	26	0.3%	2.6%
Wednesday	10	1.2%	9.2%	93	1.2%	9.4%
Thursday	21	2.5%	19.3%	208	2.7%	21.2%
Friday	51	6.1%	46.8%	459	6.0%	46.8%
Saturday	9	1.1%	8.3%	78	1.0%	7.9%
Sunday	7	0.8%	6.4%	47	0.6%	4.8%
No Response	727	87.0%	n/a	6,619	87.1%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%



Question 12: In what year did you begin riding CAT?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
2006	89	10.6%	11.3%	781	10.3%	10.9%
2007	77	9.2%	9.8%	777	10.2%	10.8%
2008	89	10.6%	11.3%	757	10.0%	10.5%
2009	113	13.5%	14.4%	1,114	14.7%	15.5%
2010	172	20.6%	21.9%	1,745	23.0%	24.3%
1st Time	18	2.2%	2.3%	210	2.8%	2.9%
Before 2006	228	27.3%	29.0%	1,806	23.8%	25.1%
No Response	50	6.0%	n/a	412	5.4%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

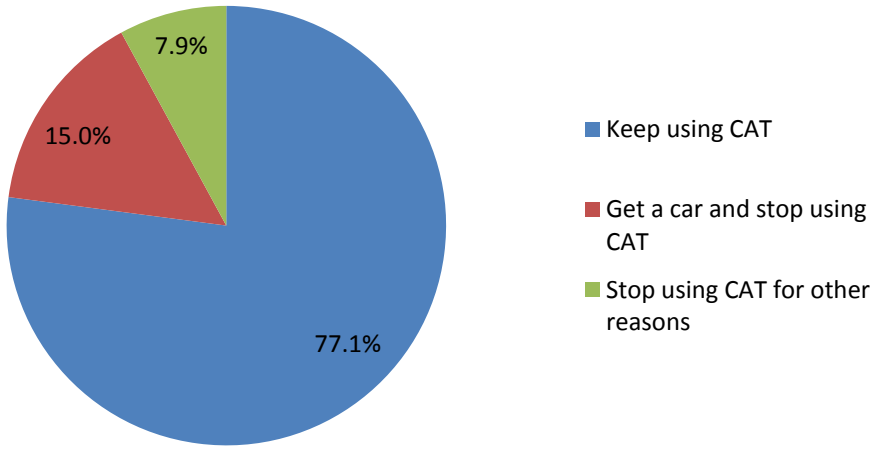
A little over one-quarter of respondents began riding CAT before 2006; specified years were 2001-2004. Almost 40% of respondents began riding in the past two years and 32% began riding between 2006 and 2008.



Question 13: A year from now, do you expect to?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Keep using CAT	593	70.9%	76.0%	5,471	72.0%	77.1%
Get a car and stop using CAT	136	16.3%	17.4%	1,065	14.0%	15.0%
Stop using CAT for other reasons	51	6.1%	6.5%	563	7.4%	7.9%
No Response	56	6.7%	n/a	502	6.6%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

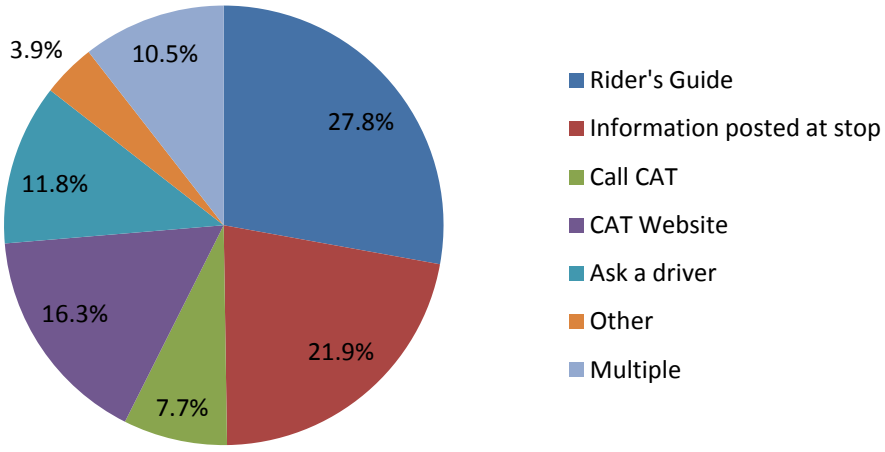
The vast majority of respondents (77%) plan to continue riding CAT, but 23% expect to quit riding for various reasons.



Question 14: From which one of these do you most often get information about CAT?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Rider's Guide	229	27.4%	29.6%	1,973	26.0%	27.8%
Information posted at bus stop	149	17.8%	19.3%	1,555	20.5%	21.9%
Call CAT	60	7.2%	7.8%	543	7.1%	7.7%
CAT Website	113	13.5%	14.6%	1,154	15.2%	16.3%
Ask a driver	107	12.8%	13.8%	840	11.0%	11.8%
Other	25	3.0%	3.2%	279	3.7%	3.9%
Multiple	90	10.8%	11.6%	747	9.8%	10.5%
No Response	63	7.5%	n/a	510	6.7%	n/a
Total	836	100.0%	100.0%	7601	100.0%	100.0%

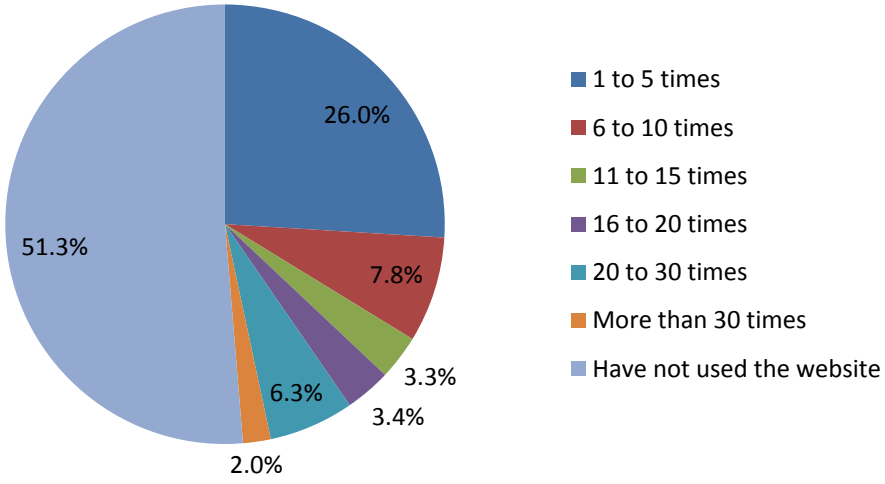
The Rider's Guide (28%) and information available at stops (22%) are the two most highest-cited ways respondents get their information about CAT. The website (16%) and bus drivers (12%) were also cited as popular methods. Friends and smartphone applications, specifically HoosBus, were the top listings under "Other".



Question 15: In the past 30 days, roughly how many times did you use CAT's website?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
1 to 5 times	190	22.7%	24.8%	1,824	24.0%	26.0%
6 to 10 times	49	5.9%	6.4%	547	7.2%	7.8%
11 to 15 times	23	2.8%	3.0%	229	3.0%	3.3%
16 to 20 times	32	3.8%	4.2%	237	3.1%	3.4%
20 to 30 times	52	6.2%	6.8%	440	5.8%	6.3%
More than 30 times	19	2.3%	2.5%	144	1.9%	2.0%
Have not used the website	401	48.0%	52.3%	3,603	47.4%	51.3%
No Response	70	8.4%	n/a	577	7.6%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

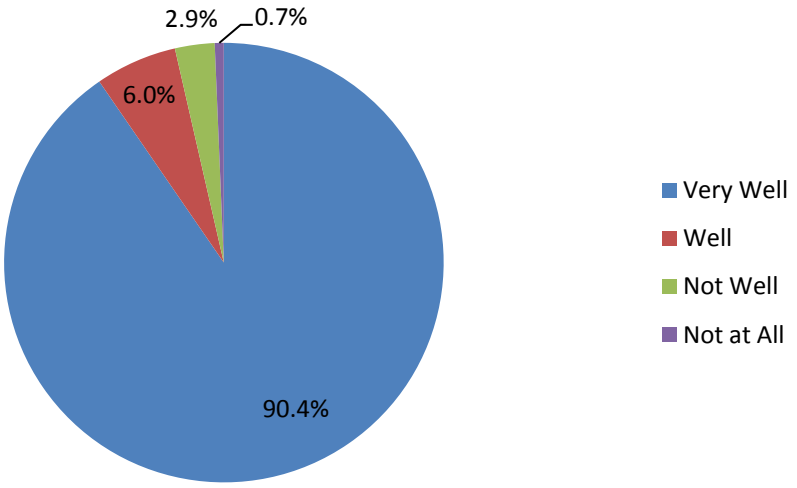
The majority of respondents (over 51%) are either not familiar with the website or have not used it within 30 days of the survey. The next largest group of respondents (26%) had used it fewer than five times in the past 30 days, and very few used it on a weekly or daily basis.



Question 16: How well do you speak the English language?

Response	Unfactored Resp.	Unfactored % of Total	Unfactored % of Resp.	Factored Resp.	Factored % of Total	Factored % of Resp.
Very Well	707	84.6%	89.9%	6,502	85.5%	90.4%
Well	50	6.0%	6.4%	432	5.7%	6.0%
Not Well	22	2.6%	2.8%	210	2.8%	2.9%
Not at All	7	0.8%	0.9%	48	0.6%	0.7%
No Response	50	6.0%	n/a	410	5.4%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Over 90% of respondents have no difficulty with speaking English. Almost 4% of the respondents have some difficulty. Thirteen surveys were completed in Spanish.



Question 17: I am:

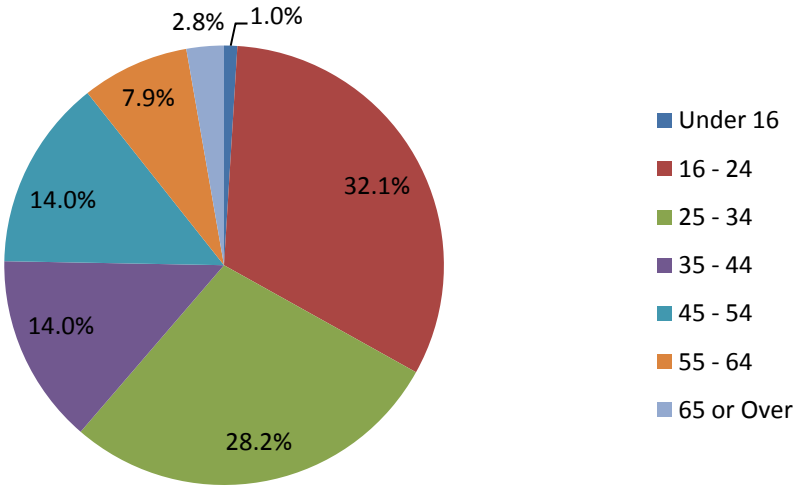
Response	Unfactored Resp.	Unfactored % of Total	Unfactored % of Resp.	Factored Resp.	Factored % of Total	Factored % of Resp.
Male	329	39.4%	42.7%	2,808	36.9%	40.1%
Female	442	52.9%	57.3%	4,203	55.3%	59.9%
No Response	65	7.8%	n/a	591	7.8%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

The majority of respondents (60%) were female.

Question 18: My age is:

Response	Unfactored Resp.	Unfactored % of Total	Unfactored % of Resp.	Factored Resp.	Factored % of Total	Factored % of Resp.
Under 16	10	1.2%	1.3%	69	0.9%	1.0%
16 - 24	223	26.7%	28.6%	2,277	30.0%	32.1%
25 - 34	195	23.3%	25.0%	2,000	26.3%	28.2%
35 - 44	115	13.8%	14.7%	991	13.0%	14.0%
45 - 54	135	16.1%	17.3%	995	13.1%	14.0%
55 - 64	73	8.7%	9.4%	561	7.4%	7.9%
65 or Over	29	3.5%	3.7%	195	2.6%	2.8%
No Response	56	6.7%	n/a	514	6.8%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

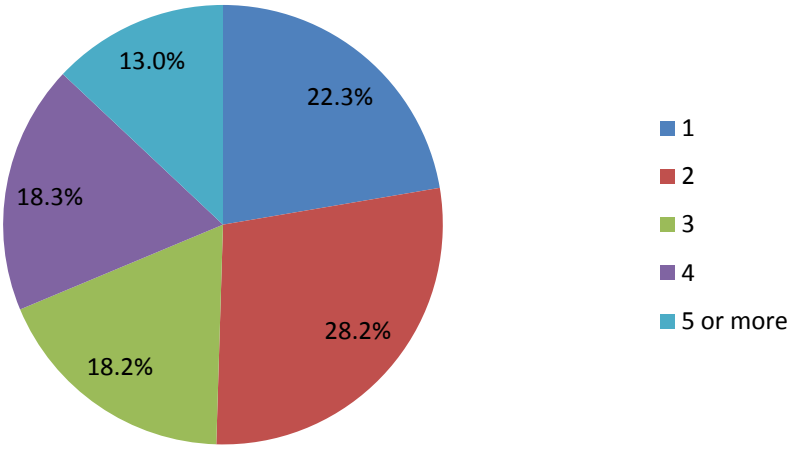
The majority of respondents (32%) are between 16 and 24 years of age and 28% are between 25 and 34. Together, these two age groups comprise over 60% of the respondents. Only 3% of the respondents are Senior Citizens.



Question 19: How many live in your household (including yourself?)

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
1	171	20.5%	22.1%	1,564	20.6%	22.3%
2	207	24.8%	26.7%	1,974	26.0%	28.2%
3	154	18.4%	19.9%	1,276	16.8%	18.2%
4	136	16.3%	17.5%	1,283	16.9%	18.3%
5 or more	107	12.8%	13.8%	910	12.0%	13.0%
No Response	61	7.3%	n/a	594	7.8%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

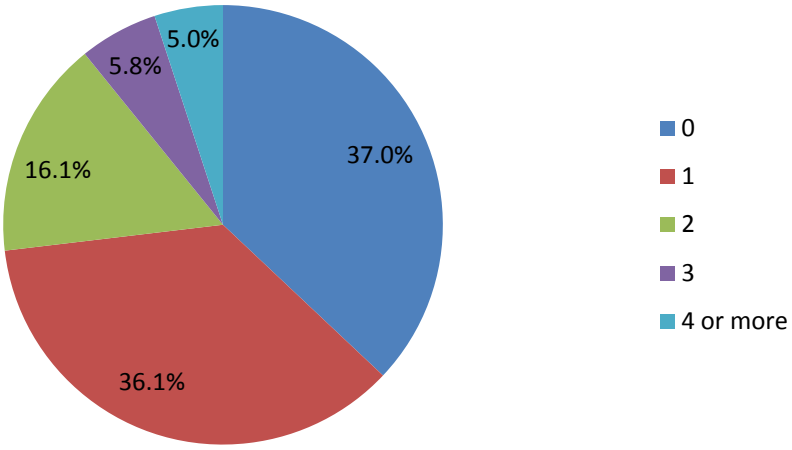
Almost a quarter of respondents live alone. Twenty-eight percent live with only one other person. Half of all respondents live in households where three or more people live.



Question 20: How many vehicles are in your household?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
0	293	35.0%	38.2%	2,589	34.1%	37.0%
1	270	32.3%	35.2%	2,525	33.2%	36.1%
2	132	15.8%	17.2%	1,123	14.8%	16.1%
3	40	4.8%	5.2%	404	5.3%	5.8%
4 or more	33	3.9%	4.3%	353	4.6%	5.0%
No Response	68	8.1%	n/a	606	8.0%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

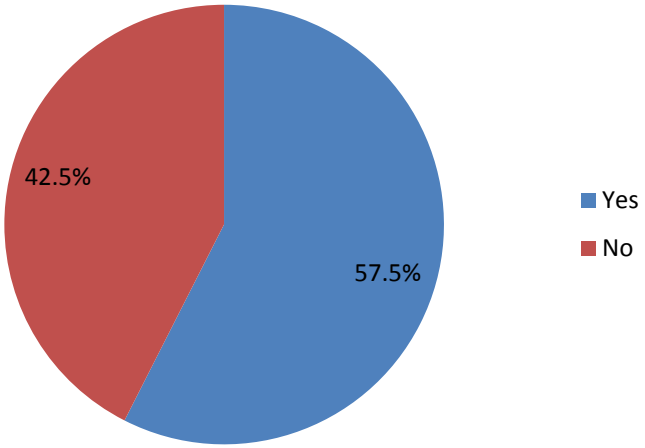
Thirty-seven percent of respondents have no car available to them. An equally large percentage of riders (36%) come from a one-car household. Twenty-seven percent of respondents have two or more cars available to their household.



Question 21: Do you have a valid driver's license?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Yes	405	48.4%	53.2%	3,983	52.4%	57.5%
No	356	42.6%	46.8%	2,946	38.8%	42.5%
No Response	75	9.0%	n/a	671	8.8%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

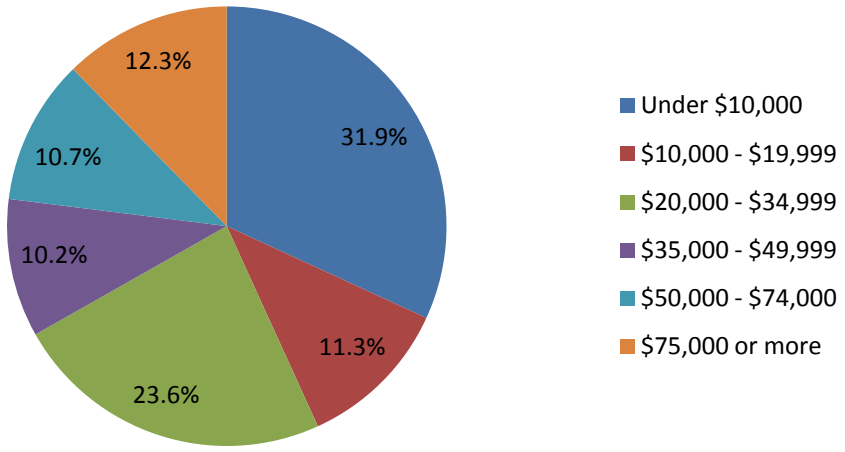
Almost 43% of respondents do not have a driver's license. This information, paired with 37% of respondents without a car, yields a strong percentage of riders who depend on CAT for transportation.



Question 22: My household's total annual income is:

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Under $10,000	205	24.5%	31.0%	1,909	25.1%	31.9%
$10,000 - $19,999	72	8.6%	10.9%	680	8.9%	11.3%
$20,000 - $34,999	171	20.5%	25.9%	1,414	18.6%	23.6%
$35,000 - $49,999	69	8.3%	10.4%	610	8.0%	10.2%
$50,000 - $74,000	70	8.4%	10.6%	641	8.4%	10.7%
$75,000 or more	74	8.9%	11.2%	739	9.7%	12.3%
No Response	175	20.9%	n/a	1,608	21.2%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Over 32% of respondents claim an annual household income below $10,000. This result is almost double for the general public.[1] Those with incomes below $35,000 are 5% greater than the general public. Those with incomes of $75,000 or more comprise 9.7% of respondents compared to 23% for Charlottesville in general. Median annual household income in Charlottesville is $38,369. Median income for the respondents was $37,742.

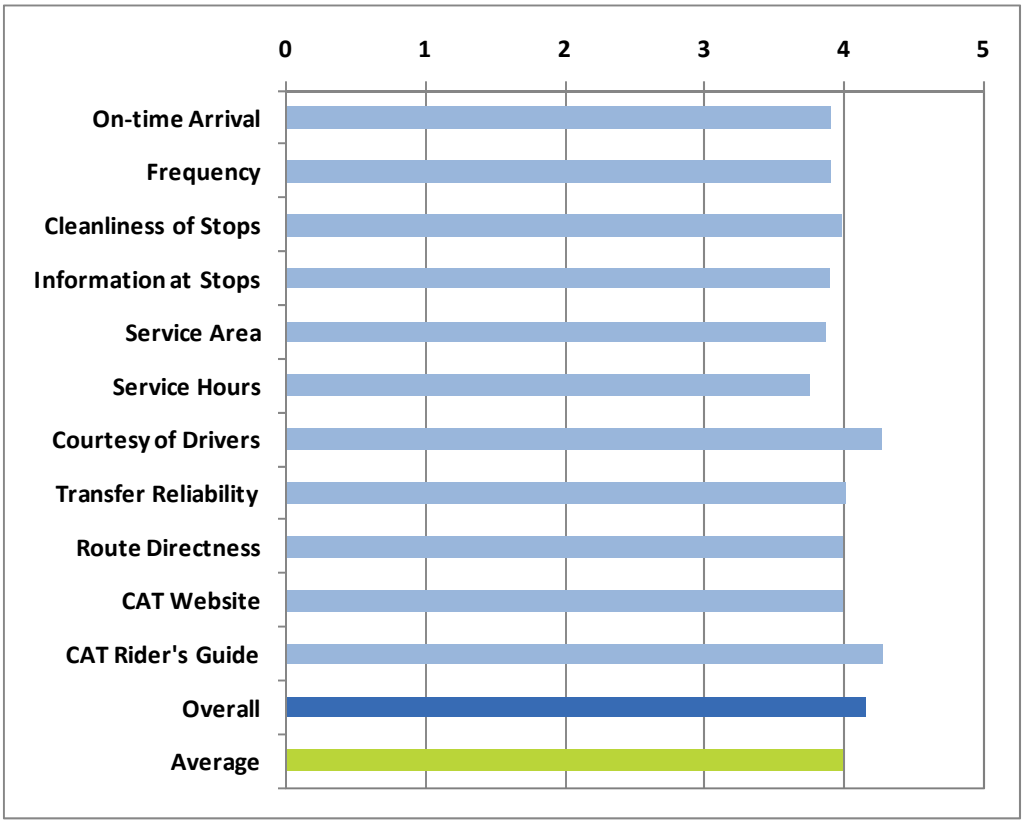


[1] 2005-2009 American Community Survey 5-Year Estimates.

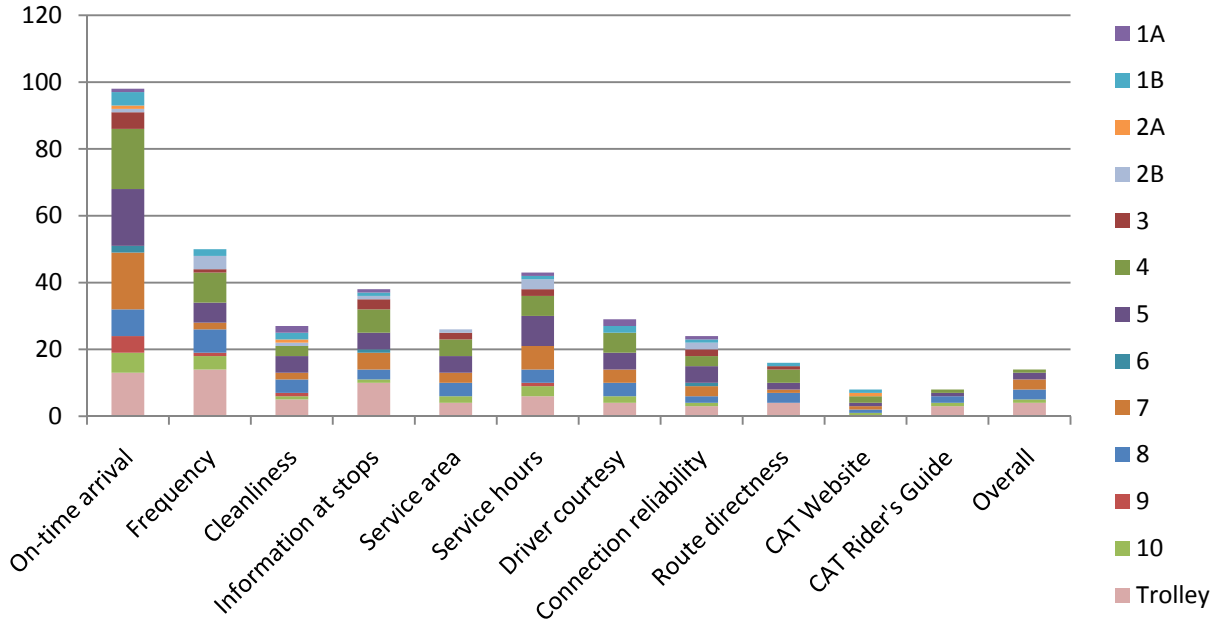
In the past thirty days, how would you rate CAT on the following factors?
(Scale of 1 to 5; 5 was described as "Excellent" and 1 was described as "Very Poor". "Don't know" was an option, as was an option to be contacted.)

Question 23: On-time arrival of bus
Question 24: Frequency of CAT bus service
Question 25: Cleanliness of stops
Question 26: Information at bus stops
Question 27: Areas that are served by CAT routes
Question 28: Hours of CAT service
Question 29: Courtesy of CAT drivers
Question 30: Reliability of connections between routes
Question 31: Directness of CAT routes
Question 32: CAT website
Question 33: CAT Rider's Guide
Question 34: Overall, how do you rate CAT?

Overall, riders rated CAT a 4.14 and the average rating for all questions was 3.99. The highest rated item was the Rider Guide at 4.27, followed by driver courtesy (4.26). The lowest rated item was CAT's service hours at 3.74, below CAT's service area at 3.86, with both trailing the availability of information at stops, rated an average of 3.88.



For the previous 12 questions, each had a space to state whether or not the respondent had a problem with the specific item the question was referring to. For instance, 98 out of 836 respondents stated they had a problem with the "on-time performance" of their route in the previous 30 days. Of those respondents, 18 were on Route 4, 17 each were on Routes 5 and 7 and 13 were on the Trolley. The question was not specific whether their problem was with the route they were on or whether their problem was on another route. The next highest cited problems were "frequency" with 50 cited problems and "service hours" with 43 problems. For "frequency", 14 of those respondents were on the Trolley, nine were on Route 4 and seven were on Route 8. For "service hours", the routes with the most cited problems were Route 5 (nine problems), Route 7 (seven problems), and Route 4 and the Trolley, each with six problems. The website and Rider's Guide had the fewest problems, with each citing eight problems total.



Question 35: Would you recommend riding CAT to a friend or coworker?

	Unfactored			*Factored*		
Response	**Resp.**	**% of Total**	**% of Resp.**	**Resp.**	**% of Total**	**% of Resp.**
Yes	678	81.1%	95.0%	6,188	81.4%	95.5%
No	36	4.3%	5.0%	293	3.9%	4.5%
No Response	122	14.6%	n/a	1,120	14.7%	n/a
Total	836	100.0%	100.0%	7,601	100.0%	100.0%

Over 95% of respondents said they would recommend CAT to friends or coworkers, yielding a very high group of satisfied respondents.

Question 36: Willing to be part of a focus group? Want CAT updates? How do we reach you?

Of the 836 surveys received, 232, or 25%, responded that they would be willing to take part in a focus group or receive updates. Of the 232, 228 recorded their name, phone number or mailing address, or email. Not all left their names but the remaining 228 supplied one method of contact. Their information is included in the electronic copy of the on-board survey data.

3.2 Trip Origin & Destination Locations

For the on-board survey, riders were asked to identify locations of their trip origin and trip destination by street address, intersection or the nearest landmark. The first step in producing useful data was completing as many addresses as possible so that they could be mapped. To that end, the origins and destinations were given either street addresses or intersections based on the route on which they had been surveyed and which routes they had connected from or would be connecting to, if applicable. To obtain as many positive matches as possible, survey responses were cleansed by correcting spelling errors, spelling-out abbreviations of names, correcting street suffixes, and as a last result, manually adding latitude and longitude. The latitude and longitude coordinates of these locations were then obtained using a geocoding processor, available at www.batchgeo.com. Finally, the coordinates were imported into ArcGIS to create a series of files which were in turn used to produce the finalized datasets.

The 836 completed on-board surveys yielded 572 trip origin locations and 602 trip destination locations that were able to be geocoded and mapped (Figure 3.1). Generally, these origins or destinations were located within ¼ mile of CAT fixed routes. There were 491 surveys (58.7%) where both trip origin and destination were able to be geocoded. The initial mapping of these trips yielded a result which did not easily show the major travel patterns occurring in the area (Figure 3.2). However, there did appear to be a high concentration of trips occurring along US 29 as well as along West Main Street and Preston Avenue. At a stop-level, Fashion Square Mall, Barracks Road Shopping Center, UVA Medical Center and the Downtown Transit Station were the most cited origins and destinations. Stop-level data will be further extracted from the on-board survey effort and analyzed in *Technical Memorandum 5 – Existing Service Evaluation and Route Profiles*.

To better understand the dominate travel patterns, the study area was segmented into aggregated zones and similar trips[2] were combined. A traffic analysis zone (TAZ) shapefile was obtained from the Thomas Jefferson Planning District Commission. The file contained 248 individual zones and included all of the city limits of Charlottesville as well as portions of surrounding Albemarle County. These zones were segmented into nineteen "superdistricts" which shared common characteristics, produced similar trips, or formed the same neighborhood or economic zone (Table 3.1). The City of Charlottesville was segmented into eight central and six outer superdistricts, while the surrounding county areas were segmented into five superdistricts.

The first result of this segmentation helped to better organize trips into major movements across the study area. For instance, all trips originating downtown destined for UVA Hospital, Lee Street or Women's Center would be captured with the superdistrict 1 to 2 movement. A better sense of the north-south movement occurring along US 29 as well as the same west-east movement along West Main Street and Preston Avenue could now be seen (Figure 3.3). Trips were finally summarized by superdistrict and shown as a hierarchy based on number (Figure 3.4).

[2] A trip from superdistrict 6 to superdistrict 14 was the same as a trip from 14 to 6; this was considered a similar trip. Thus, as found in Table 3.2, there were 8 total trips between the superdistrict pair.

The final result shows major trips originating within the core of the university (23%), along West Main and in the Rose Hill/Barracks-Rugby neighborhoods (13%) as well as downtown within the central business district (15.7%). These areas are also where most trips terminate: 19.6% for the core of UVA, 16.7% along West Main Street and Rose Hill/Barracks-Rugby and 12% downtown (Table 3.2). It is important to note that many of trips recorded as originating in or destined to the Rose Hill/Barracks-Rugby neighborhoods occurred along the southern boundary of the superdistrict, particularly along the north side of the West Main corridor. The analysis also noted that the Central UVA area as well as the Rose Hill/Barracks-Rugby areas exhibited the highest number of self-contained trips.

Figure 3.1
Locations of Major Origins and Destinations

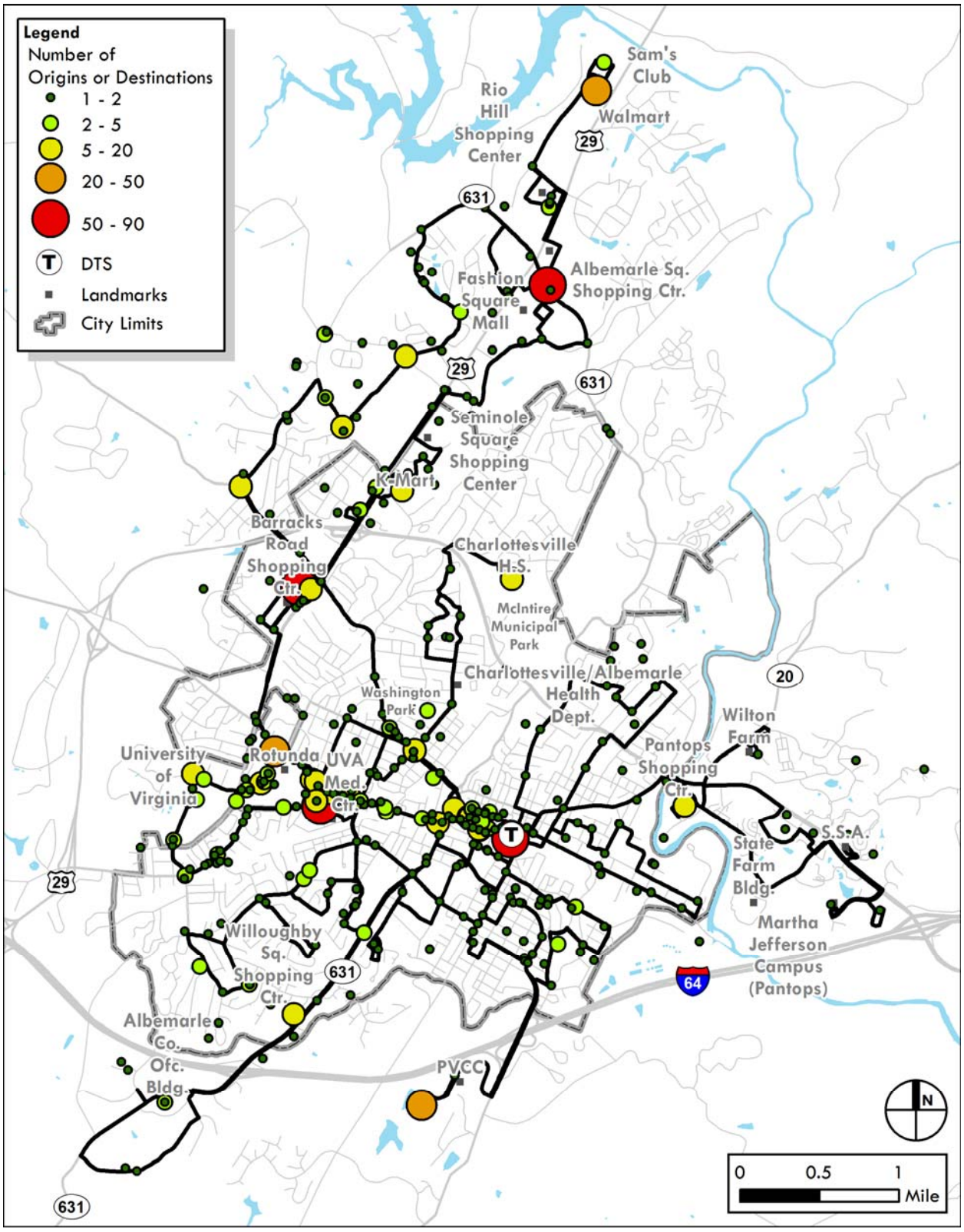


Figure 3.2
All Individual Trips

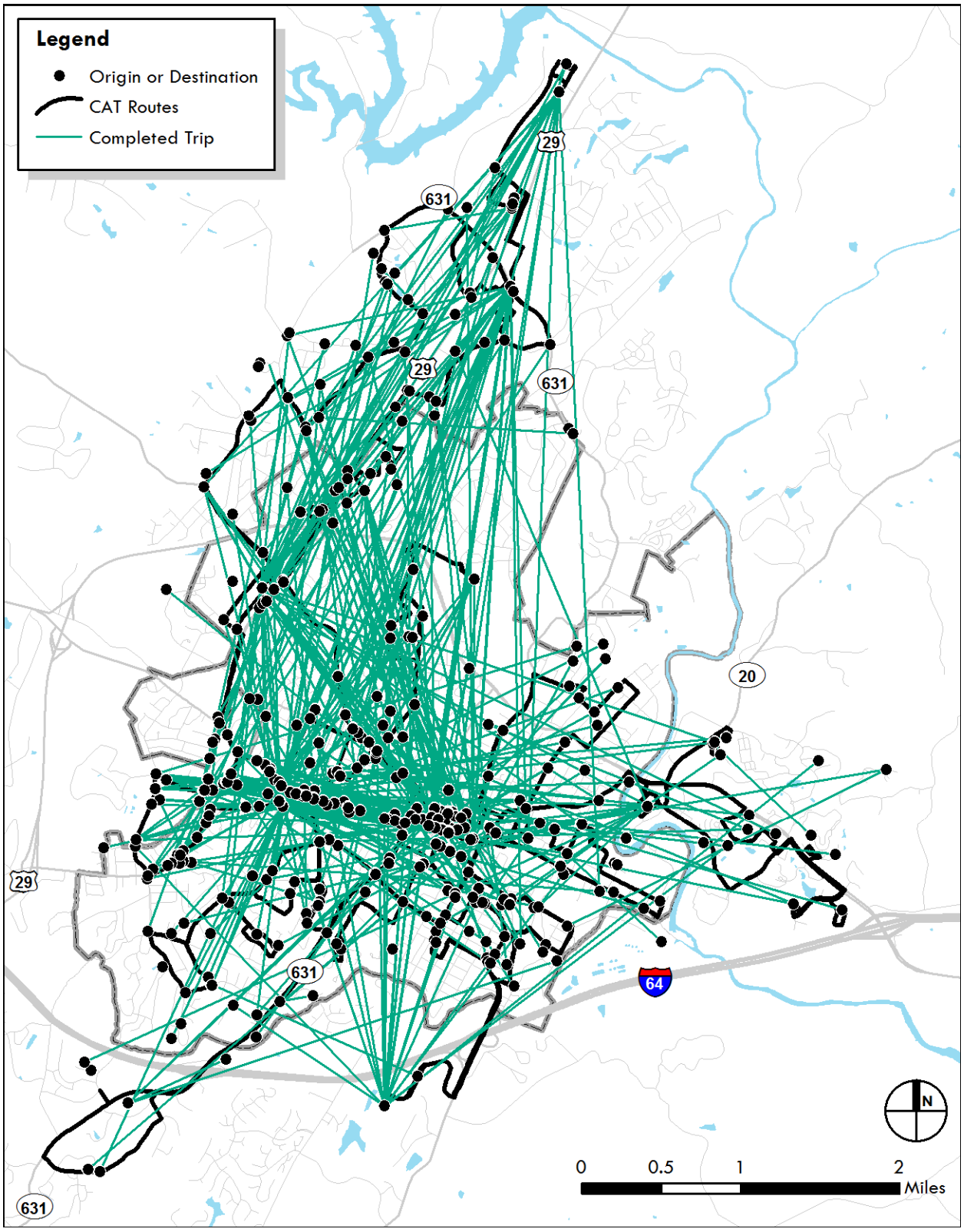


Table 3.1
TAZ Superdistricts

Number	Superdistrict Name
Central Areas	
1	Downtown (CBD)
2	UVA 1 (Medical/Central)
3	UVA 2 (West)
4	UVA 3 (Law/North)
5	Barracks Rd. Shopping Center
6	Fashion Sq. Mall/Albemarle Sq. Shopping Ctr.
7	Walmart/Sam's Club/Rio Rd. Shopping Ctr.
8	Pantops Corridor
Surrounding City Areas	
9	Locust Grove
10	Rose Hill/Barracks-Rugby
11	Cherry Ave./Fry's Spring
12	Belmont/Ridge St.
13	McIntire/Greenbrier Hgts.
14	Georgetown/Hydraulic/Greenbrier
Albemarle County Areas	
15	NW of Hydraulic
16	Rio Hgts./West of Stony Pt. Rd.
17	PVCC/Monticello
18	Old Lynchburg Rd.
19	Four Seasons/Commonwealth

Figure 3.3
Aggregated CAT Travel Patterns to TAZ Superdistricts

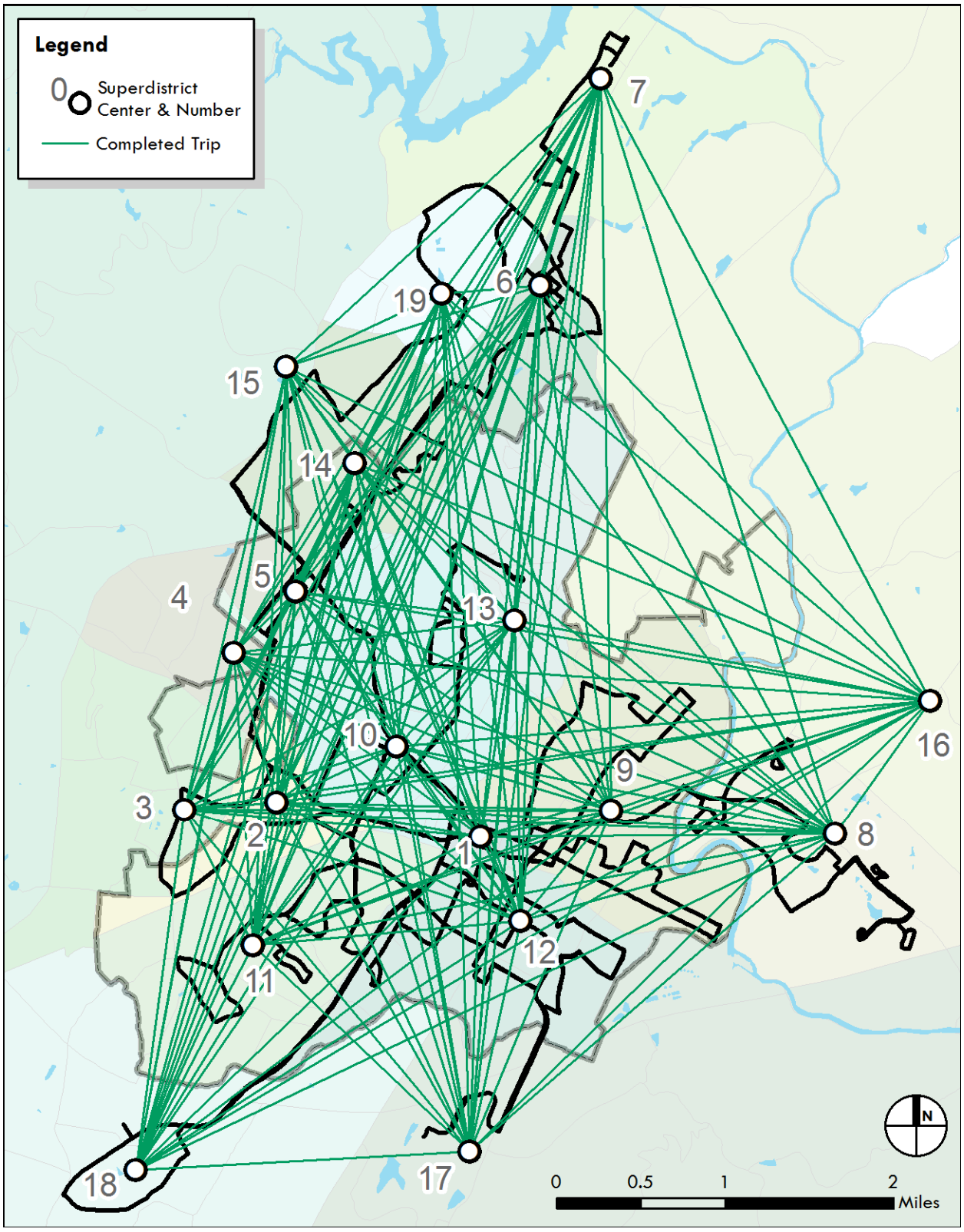


Figure 3.4
Organized CAT Travel Patterns to TAZ Superdistricts

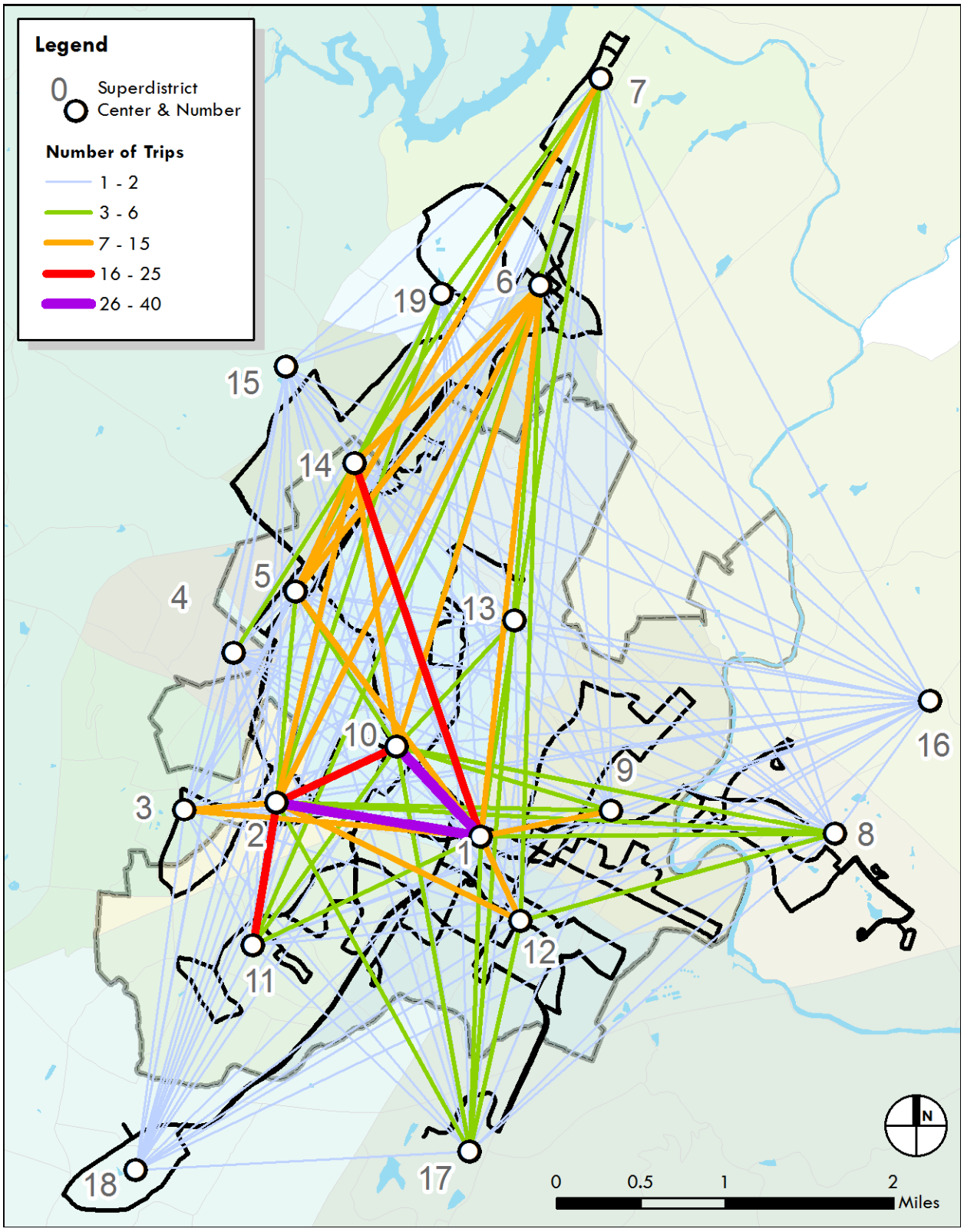


Table 3.2
Matrix of Superdistrict to Superdistrict Trip Activity

Origin TAZ Superdistrict	Destination TAZ Superdistrict																			Total Originating Trips	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		%
1	3	22	5	1	10	4	2	5	3	17	3	7	1	5		1	6		1	96	*19.6*
2	15	18	5		1	2		1	2	5	3	3		2			1		1	59	*12.0*
3	6	9								2										17	*3.5*
4	1	1					1		1					4						8	*1.6*
5	1	4				6	7	1		1							1		1	22	*4.5*
6	7	5		1	4	1	1	1		1				3			2		1	27	*5.5*
7	1	1							1					1					4	8	*1.6*
8	1	2		1	1			1	1	2		1					1			11	*2.2*
9	5	4	1		2	1	1			3		2					1			20	*4.1*
10	15	15	1		3	6	3	4	3	17		1	2	7			4		1	82	*16.7*
11	2	13			2	4		2		4	2						2			31	*6.3*
12	4	7		1	1	3	1	4		1	1	7				1	3	1	1	36	*7.3*
13	1	2								4										7	*1.4*
14	12	5			7	5	3		1	5				1		1			3	43	*8.8*
15	1																			1	*0.2*
16										1							1			2	*0.4*
17		2				1			1	2										6	*1.2*
18	2					1		1	1									1		6	*1.2*
19		2		1	2		1				1			1					1	9	*1.8*
	77	112	12	5	33	34	20	20	14	65	10	21	3	24	0	3	22	2	14	491	
%	*15.7*	*22.8*	*2.4*	*1.0*	*6.7*	*6.9*	*4.1*	*4.1*	*2.9*	*13.2*	*2.0*	*4.3*	*0.6*	*4.9*	*0*	*0.6*	*4.5*	*0.4*	*2.9*		

Total Completed Trips

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #5: Existing Service Evaluation and Route Profiles

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

January 2011

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This particular Technical Memorandum presents a detailed evaluation of existing CAT bus service. This analysis has been completed to identify route strengths and weaknesses, which in turn, will be the basis for TDP service recommendations.

As part of this TDP work effort, the following data collection efforts occurred:

- A full ridecheck survey effort for weekday, Saturday and Sunday service was completed between October 30th and November 6th, 2010;
- A weekday on-board survey was also conducted during this time period; and
- Extensive fieldwork was completed by consultant service planners.

This Technical Memorandum begins with a systems-level evaluation of CAT's service characteristics. Existing ridership and service productivity measures have been reviewed as part of this system-level evaluation. Individual route profiles are then provided. These profiles present a detailed assessment of current route characteristics and route strengths and weaknesses. Much of the route-level analysis is based on the collected ridecheck survey data.

2 Charlottesville Area Transit Systems Level Analysis

Charlottesville Area Transit (CAT) provides fixed-route in the City of Charlottesville and portions of Albemarle County. The University of Virginia campus is served by several of CAT's fixed routes. Service is provided Monday through Sunday. Saturday service coverage is the same as weekday coverage. CAT operates a reduced level of weekday evening and Saturday evening service, with two regular routes and four routes that operate only in the evenings (Routes 21 through 24). On Sundays CAT operates only Route 7 and the Trolley. The typical maximum span of service is generally as follows:

- Weekdays – 6:15 a.m. to 11:15 p.m.
- Saturdays – 6:15 a.m. to 11:15 p.m.
- Sundays – 8:00 a.m. to 5:00 p.m.

It is important to note that not all routes operate during the full span of service.

Year 2007 population and employment estimates from the Thomas Jefferson Planning District Commission (TJPDC) were utilized to estimate the number of residents and employees located within one-quarter mile of a CAT bus route. Estimates are as follows:

Weekday and Saturday Service
- Population – 77,600
- Employment – 55,200

Weekday and Saturday Evening Service
- Population – 60,400
- Employment – 52,700

Sunday Service
- Population – 35,700
- Employment – 42,900

Figures 2-1 and 2-2 present the weekday and Saturday route system (daytime and evening). Figure 2-3 presents the Sunday route system.

2.1 System Requirements

Service frequencies vary on CAT routes depending on the route, time of day and service scenario (i.e., full vs. reduced schedule). Tables 2-1 through 2-3 present each route's span of service, frequencies and estimated service statistics for weekday, Saturday and Sunday service. Route service frequencies are on "clock" headways, with either 15, 30 or 60-minute frequencies on weekdays and Saturdays. Estimated annual service statistics for CAT based on typical weekday, Saturday and Sunday service plans are as follows:

- Maximum weekday buses in operation – 25
- Maximum Saturday buses in operation – 22
- Maximum Sunday buses in operation – 4
- Annual revenue bus-hours of service – 88,500
- Annual revenue bus-miles of service – 933,300

Figure 2-1
Charlottesville Area Transit
Weekday and Saturday Daytime Transit Service

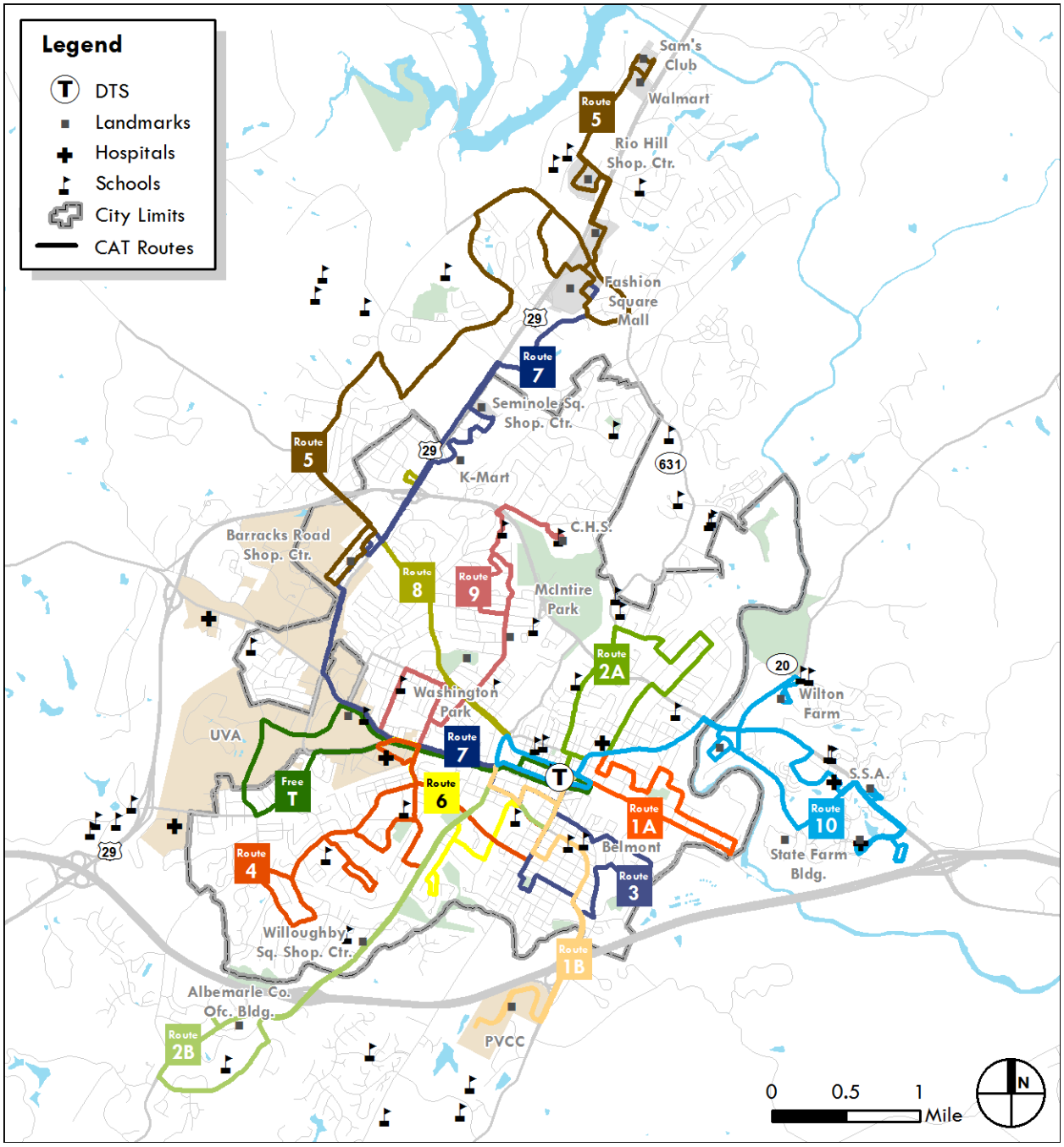


Figure 2-2
Charlottesville Area Transit
Weekday and Saturday Evening Transit Service

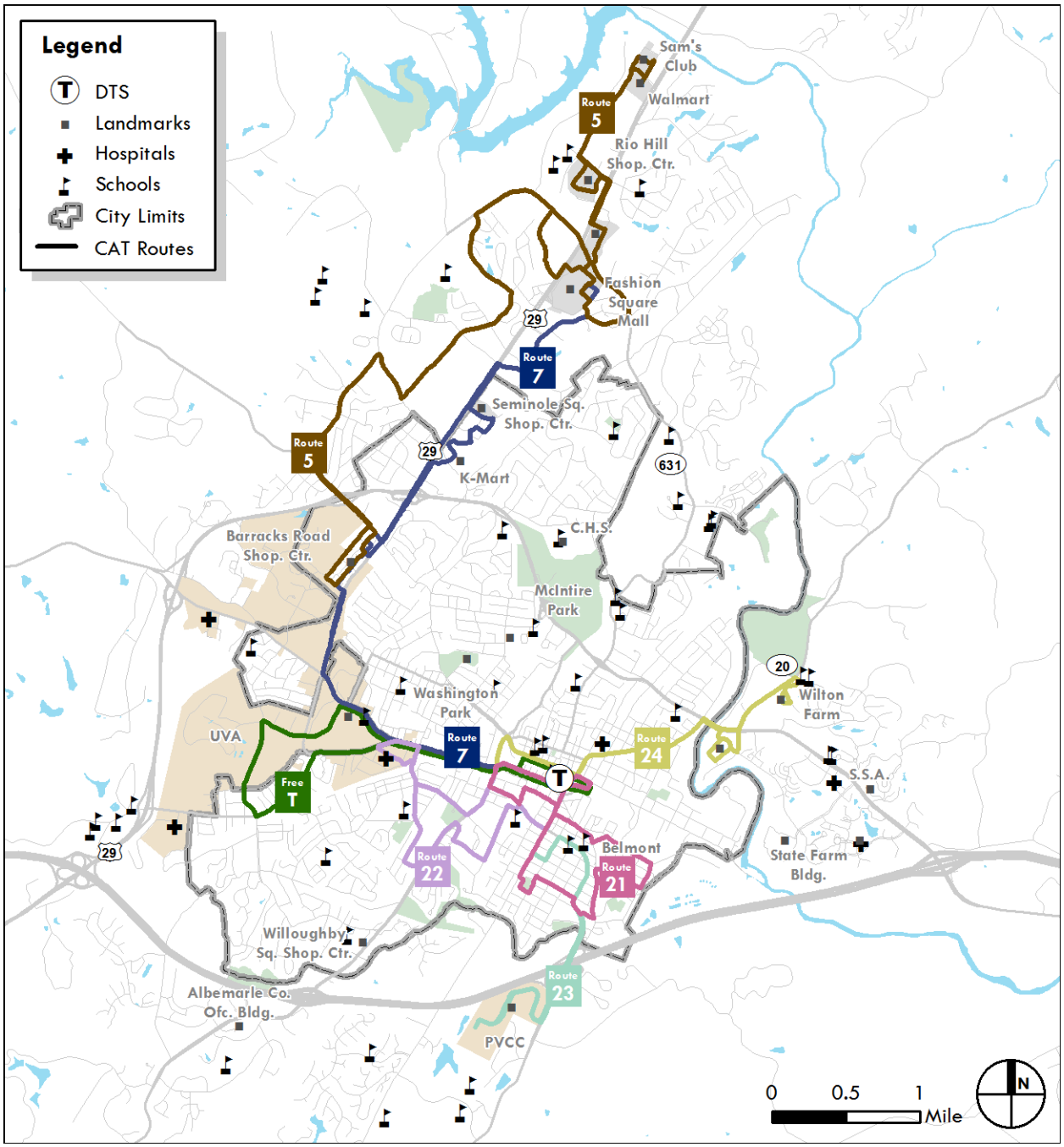
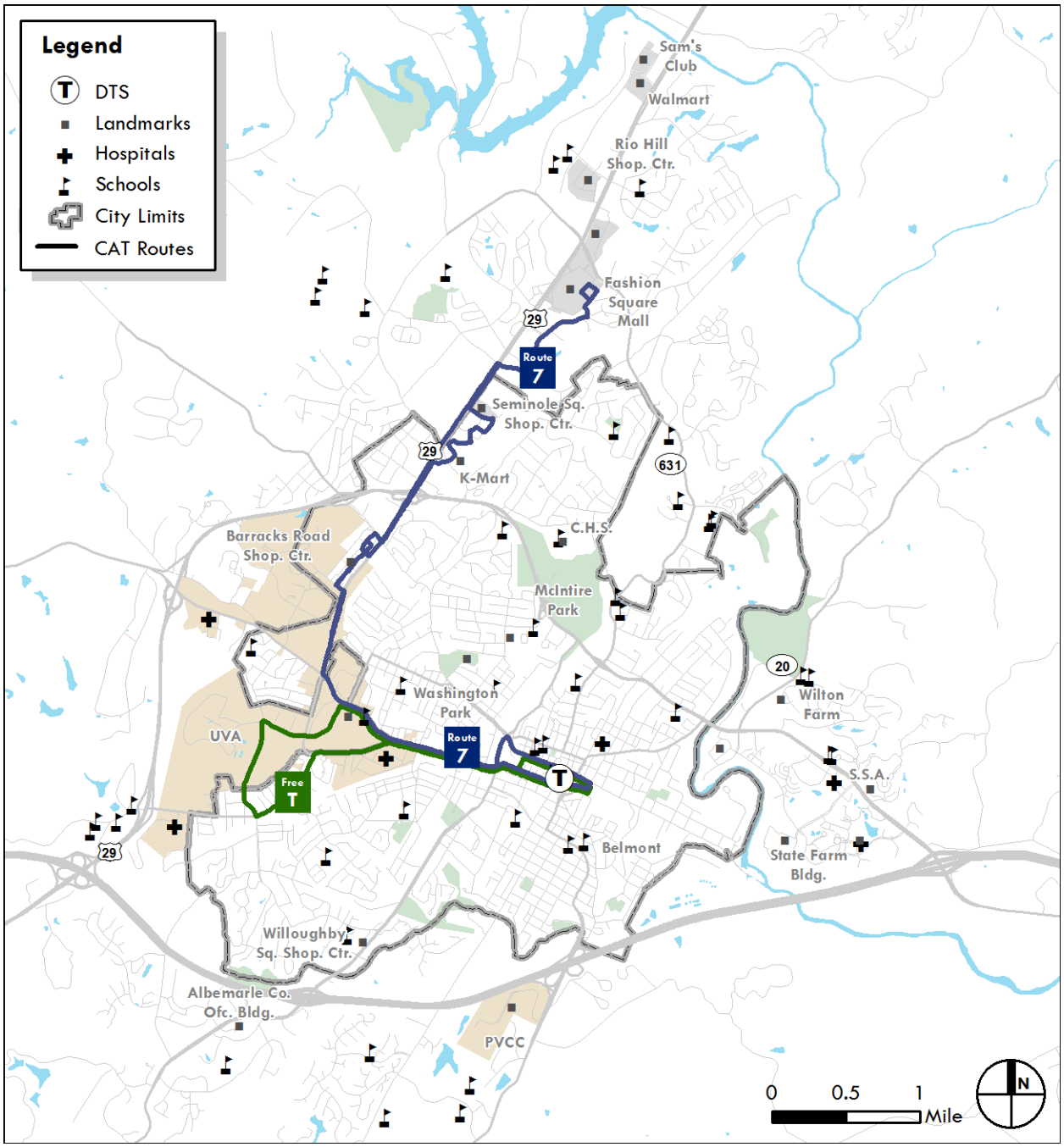


Figure 2-3
Charlottesville Area Transit
Sunday Transit Service



Tables 2-1, 2-2 and 2-3
Weekday Operating Plan

Route Number	Route Description	Interline	Start of First/ Last Trips	Service Frequency				Daily Trips	PM Peak Period Cycle Time			One-Way Distance (Miles)	Average Weekday		Bus Requirements			
				AM Peak Period	Midday Period	PM Peak Period	Eve. Period		Time (Min.)	Layover Time	Cycle Time		Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley		0640 - 2330	15	15	15	15	68	40	5	45	5.7	44.8	387.6	2	3	3	2
1	1A East Market	Y (1B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5	6.5	65	0.5	0.5	0.5	0
	1B PVCC	Y(1A)	0645 - 1745	60	60	60	n/a	12	27	3	30	7.5	6	90	0.5	0.5	0.5	0
2	2A Locust Ave	Y (2B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5.3	6.5	68.9	0.5	0.5	0.5	0
	2B Southwood	Y (2A)	0645 - 1745	60	60	60	n/a	12	30	0	30	8.2	6	98.4	0.5	0.5	0.5	0
3	Belmont	Y (6)	0620 - 1820	30	60	30	n/a	20	22	8	30	4.7	10	94	1	0.5	1	0
4	UVA Hospital, Fry's Spring, Downtown		0630 - 1807	30	60	30	n/a	19	55	5	60	13.9	19	264.1	2	1	2	0
5	Barracks Road to Walmart		0615 - 2215	30	30	30	30	63	40	10	90	8.2	47.3	516.6	3	3	3	3
6	Ridge, UVA & Downtown	Y (3)	0645 - 1815	30	60	30	n/a	19	30	0	30	6	9.5	114	1	0.5	1	0
7	Downtown to Fashion Square		0630 - 2315	15	15	15	30	116	42	6	90	6.3	73.5	730.8	4	6	6	2
8	Seminole & Downtown		0630 - 1800	30	60	30	n/a	19	55	5	60	8.5	19	161.5	2	1	2	0
9	Charlottesville High School		0645 - 1745	60	60	60	n/a	12	55	5	60	10.8	12	129.6	1	1	1	0
10	Pantops		0615 - 1815	60	60	60	n/a	13	57	3	60	11.8	13	153.4	1	1	1	0
21	(Night) Belmont	Y (22)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	4.9	5	49	0	0	0	1
22	(Night) Prospect Ave, UVA Hosp.	Y (21)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	5.6	5	56	0	0	0	1
23	(Night) PVCC	Y (24)	1845 - 2245	n/a	n/a	n/a	60	5	n/a	n/a	n/a	7.6	2.5	38	0	0	0	0.5
24	(Night) Pantops	Y (23)	1915 - 2315	n/a	n/a	n/a	60	5	n/a	n/a	n/a	5.5	2.5	27.5	0	0	0	0.5
TOTALS								**429**		82	**645**		**288.1**	**3044.4**	**19**	**19**	**22**	**10**

Saturday Operating Plan

Route Number	Route Description	Interline	Start of First/ Last Trips	Service Frequency				Daily Trips	PM Peak Period Cycle Time			One-Way Distance (Miles)	Average Saturday		Bus Requirements			
				AM Peak Period	Midday Period	PM Peak Period	Eve. Period		Time (Min.)	Layover Time	Cycle Time		Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	UVA Trolley		0640 - 2330	15	15	15	15	68	40	5	45	5.7	44.8	387.6	2.0	3.0	3.0	2.0
1	1A East Market	Y (1B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5.0	6.5	65.0	0.5	0.5	0.5	0.0
	1B PVCC	Y(1A)	0645 - 1745	60	60	60	n/a	12	27	3	30	7.5	6.0	90.0	0.5	0.5	0.5	0.0
2	2A Locust Ave	Y (2B)	0620 - 1820	60	60	60	n/a	13	22	8	30	5.3	6.5	68.9	0.5	0.5	0.5	0.0
	2B Southwood	Y (2A)	0645 - 1745	60	60	60	n/a	12	30	0	30	8.2	6.0	98.4	0.5	0.5	0.5	0.0
3	Belmont	Y (6)	0620 - 1820	60	60	60	n/a	13	22	8	30	4.7	6.5	61.1	0.5	0.5	0.5	0.0
4	UVA Hospital, Fry's Spring, Downtown		0630 - 1807	60	60	60	n/a	12	55	5	60	13.9	12.0	166.8	1.0	1.0	1.0	0.0
5	Barracks Road to Walmart		0615 - 2215	30	30	30	30	63	42.5	5	90	8.2	47.3	516.6	3.0	3.0	3.0	3.0
6	Ridge, UVA & Downtown	Y (3)	0645 - 1745	60	60	60	n/a	12	30	0	30	6.0	6.0	72.0	0.5	0.5	0.5	0.0
7	Downtown to Fashion Square		0630 - 2315	15	15	15	30	116	42	6	90	6.3	73.5	730.8	4.0	6.0	6.0	2.0
8	Seminole & Downtown		0630 - 1800	60	60	60	n/a	12	55	5	60	8.5	12.0	102.0	1.0	1.0	1.0	0.0
9	Charlottesville High School		0645 - 1745	60	60	60	n/a	12	55	5	60	10.8	12.0	129.6	1.0	1.0	1.0	0.0
10	Pantops		0615 - 1815	60	60	60	n/a	13	57	3	60	11.8	13.0	153.4	1.0	1.0	1.0	0.0
21	(Night) Belmont	Y (22)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	4.9	5.0	49.0	0.0	0.0	0.0	1.0
22	(Night) Prospect Ave, UVA Hosp.	Y (21)	1845 - 2315	n/a	n/a	n/a	30	10	n/a	n/a	n/a	5.6	5.0	56.0	0.0	0.0	0.0	1.0
23	(Night) PVCC	Y (24)	1845 - 2245	n/a	n/a	n/a	60	5	n/a	n/a	n/a	7.6	2.5	38.0	0.0	0.0	0.0	0.5
24	(Night) Pantops	Y (23)	1915 - 2315	n/a	n/a	n/a	60	5	n/a	n/a	n/a	5.5	2.5	27.5	0.0	0.0	0.0	0.5
TOTALS								**401**		**61**	**645**		**267.1**	**2812.7**	**16.0**	**19.0**	**19.0**	**10.0**

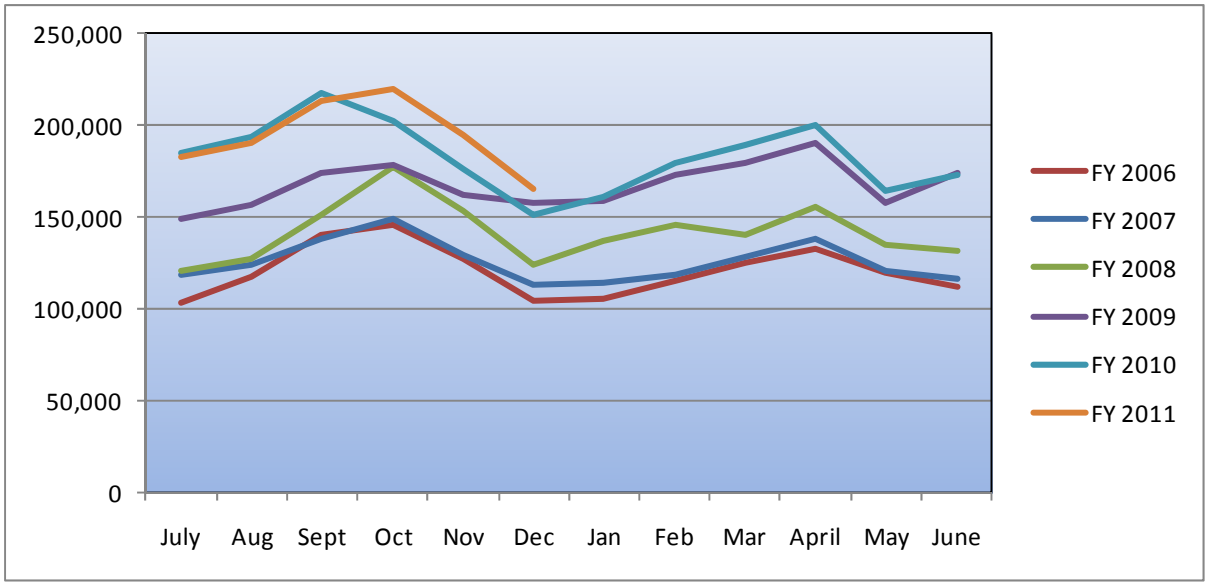
Sunday Operating Plan

Route Number	Route Description	Start of First/ Last Trips	Service Frequency				Daily Trips	PM Peak Period Cycle Time			One-Way Distance (Miles)	Average Sunday		Bus Requirements			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period		Time (Min.)	Layover Time	Cycle Time		Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0800 - 1700	30	45	45	n/a	16	42	3	45	5.7	9.8	91.2	1.0	1.0	1.0	0.0
7	Downtown to Fashion Square	0745 - 1715	30	30	30	n/a	40	42	6	90	6.3	25.1	252	2.0	3.0	3.0	0.0
TOTALS							**56**		9	**135**		**34.9**	**343.2**	**3.0**	**4.0**	**4.0**	**0.0**

2.2 Historical Ridership Characteristics

Monthly ridership reports from Charlottesville Area Transit were graphed to determine ridership trends since FY 2006. Figure 2-4 presents these trends.

Figure 2-4
System Monthly Ridership (FY 2006 through FY 2010)

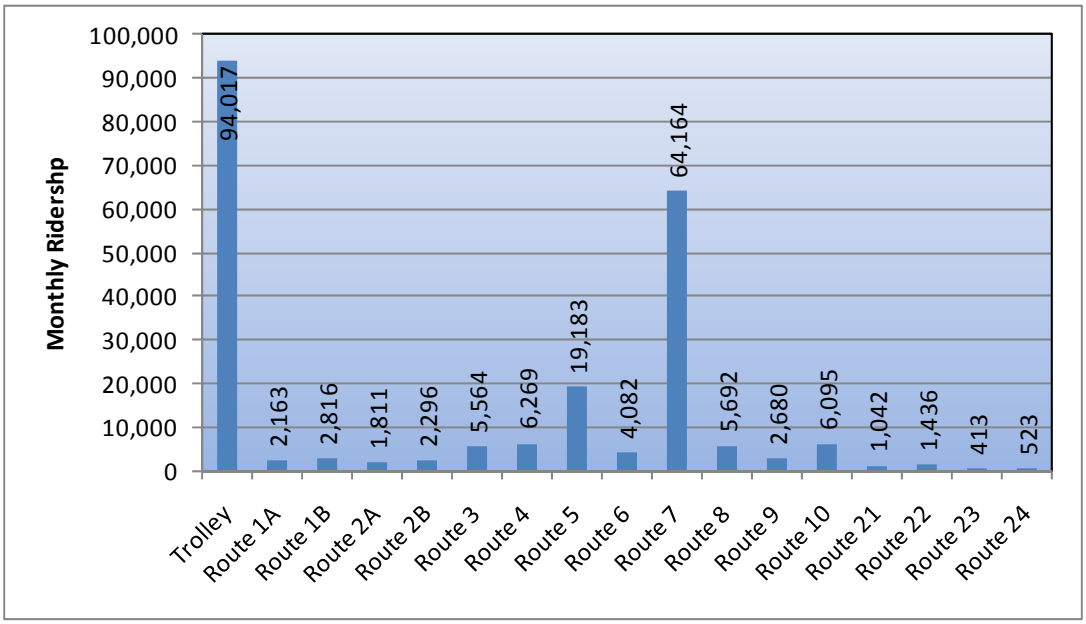


Annual fixed route ridership averaged 1.45 million in FY 2006 and has grown to almost 2.2 million in FY 2010 – a 51 percent increase. As shown in the above graph, October usually has the highest ridership and December typically has the lowest monthly ridership in each fiscal year. For this current fiscal year (FY 2011) ridership for July through September has tracked closely with FY 2010 ridership during the same months. FY 2011 October, November and December ridership, however, was significantly higher than FY 2010 ridership.

2.3 Current Ridership Characteristics

October 2010 ridership was examined more closely to determine ridership characteristics by route and is shown in Figure 2-5. October 2010 ridership was utilized for consistency with the timeframe when this project's ridecheck survey was completed. The Trolley was CAT's highest ridership route in October 2010 (42.7% of monthly ridership) followed by Route 7 (29.1% of monthly ridership). Route 5 was the third highest ridership route (8.7% of monthly ridership). All other CAT routes carried less than 20% of CAT's monthly ridership. It is important to note that all passengers can ride for free on the Trolley route.

Figure 2-5
October 2010 CAT Monthly Ridership by Route



CAT's ridership reports do not break down ridership on a weekday, Saturday and Sunday basis. Therefore, ridership data from this project's ridecheck survey has been used to determine CAT ridership characteristics on a day of week basis and by route. The ridecheck survey was conducted from October 30 through November 6, 2010. Tables 2-4 through 2-6 present this information. Daily ridership counts from the ridecheck survey were as follows:

- Weekday – 7,763
- Saturday – 6,574
- Sunday – 1,363

On weekdays, Routes 5, 7 and the Trolley account for over 74% of daily ridership. On Saturdays, these three routes account for over 82% of daily ridership.

System ridership from the ridecheck survey was also summarized by hour. Figures 2-6 through 2-8 present hourly CAT ridership for weekdays, Saturday and Sunday. On weekdays, A.M. peak period ridership (6 to 9 a.m.) accounts for 15.5% and p.m. peak period ridership accounts for 25% of daily ridership (3 to 6 p.m.). The highest weekday ridership hour was from 3 to 4 p.m. On Saturdays, ridership builds in the morning and is consistently over 500 passengers per hour between 11:00 a.m. and 6:00 p.m., with the highest ridership hour occurring from 4 to 5 p.m. On Sundays, ridership is highest in the 2 to 3 p.m. hour.

Table 2-4
CAT Weekday Ridership by Route

Route	Boardings	Alightings	Average	Percent of Total
1A	87	81	84	1.1%
1B	154	160	157	2.0%
2A	68	67	68	0.9%
2B	169	170	170	2.2%
3	243	235	239	3.1%
4	359	359	359	4.6%
5	705	705	705	9.1%
6	207	215	211	2.7%
7	2,444	2,445	2,445	31.5%
8	274	274	274	3.5%
9	156	156	156	2.0%
10	267	267	267	3.4%
21	42	42	42	0.5%
22	83	83	83	1.1%
23	23	23	23	0.3%
24	12	12	12	0.2%
Trolley	2,468	2,471	2,470	31.8%
Total	**7,761**	**7,765**	**7,763**	**100%**

Table 2-5
CAT Saturday Ridership by Route

Route	Boardings	Alightings	Average	Percent of Total
1A	53	46	50	0.8%
1B	25	34	30	0.4%
2A	43	38	41	0.6%
2B	105	110	108	1.6%
3	169	160	165	2.5%
4	125	125	125	1.9%
5	759	760	760	11.6%
6	93	102	98	1.5%
7	2,011	1,988	2,000	30.4%
8	163	163	163	2.5%
9	85	85	85	1.3%
10	229	229	229	3.5%
21	21	19	20	0.3%
22	25	27	26	0.4%
23	9	10	10	0.1%
24	18	17	18	0.3%
Trolley	2,658	2,644	2,651	40.3%
Total	**6,591**	**6,557**	**6,574**	**100%**

Table 2-6
CAT Sunday Ridership by Route

Route	Boardings	Alightings	Average	Percent of Total
7	649	649	649	47.6%
Trolley	714	714	714	52.4%
Total	**1,363**	**1,363**	**1,363**	**100%**

Figure 2-6
CAT Weekday Hourly Ridership

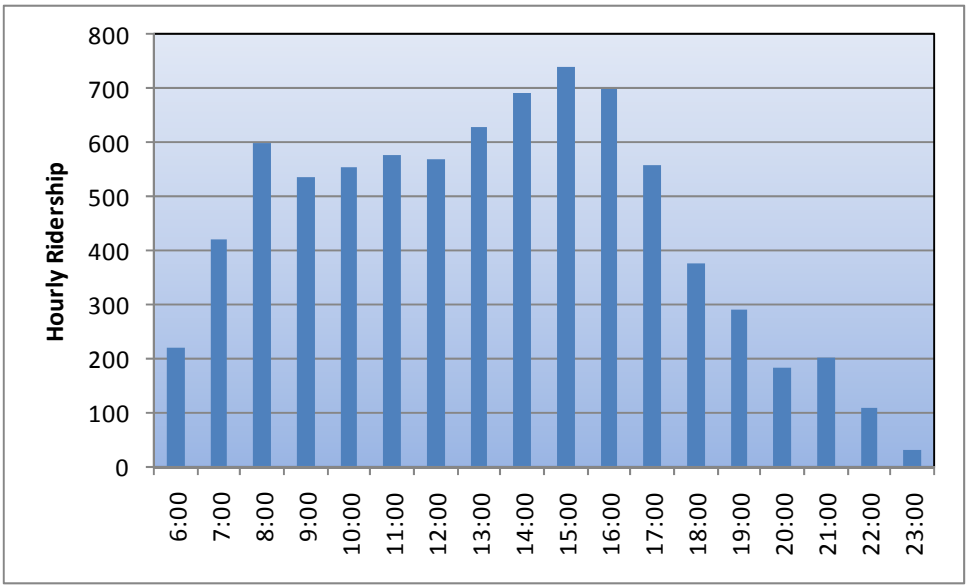


Figure 2-6
CAT Saturday Hourly Ridership

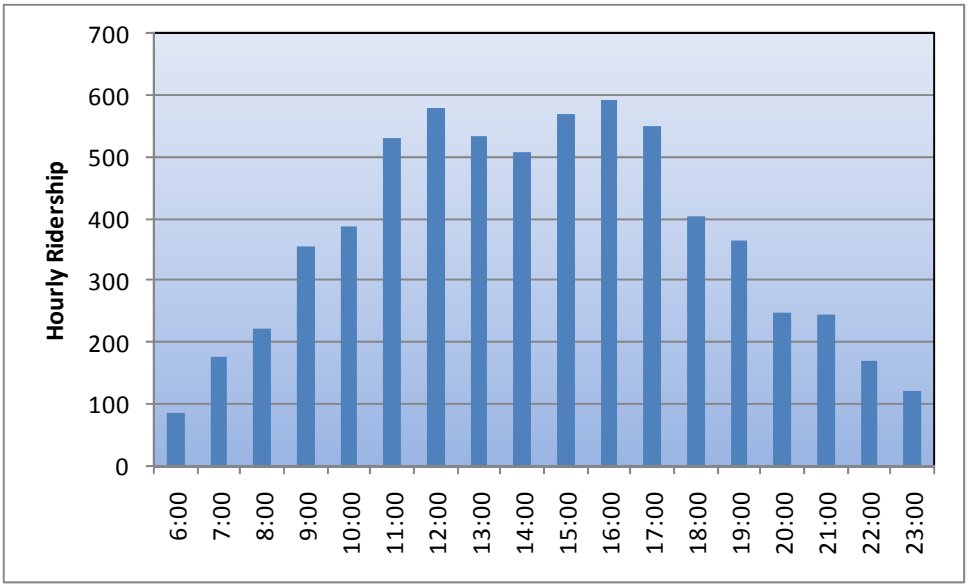
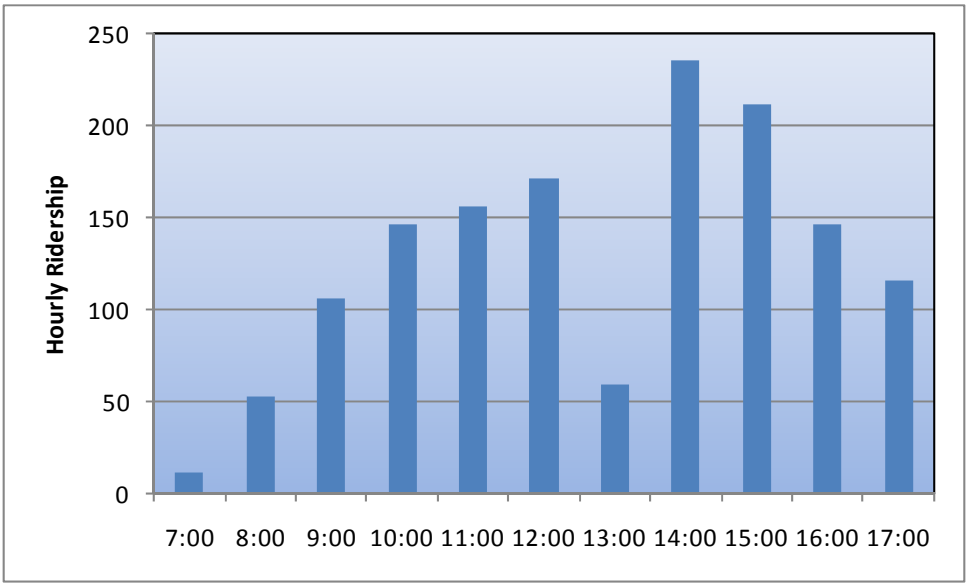


Figure 2-7
CAT Sunday Hourly Ridership

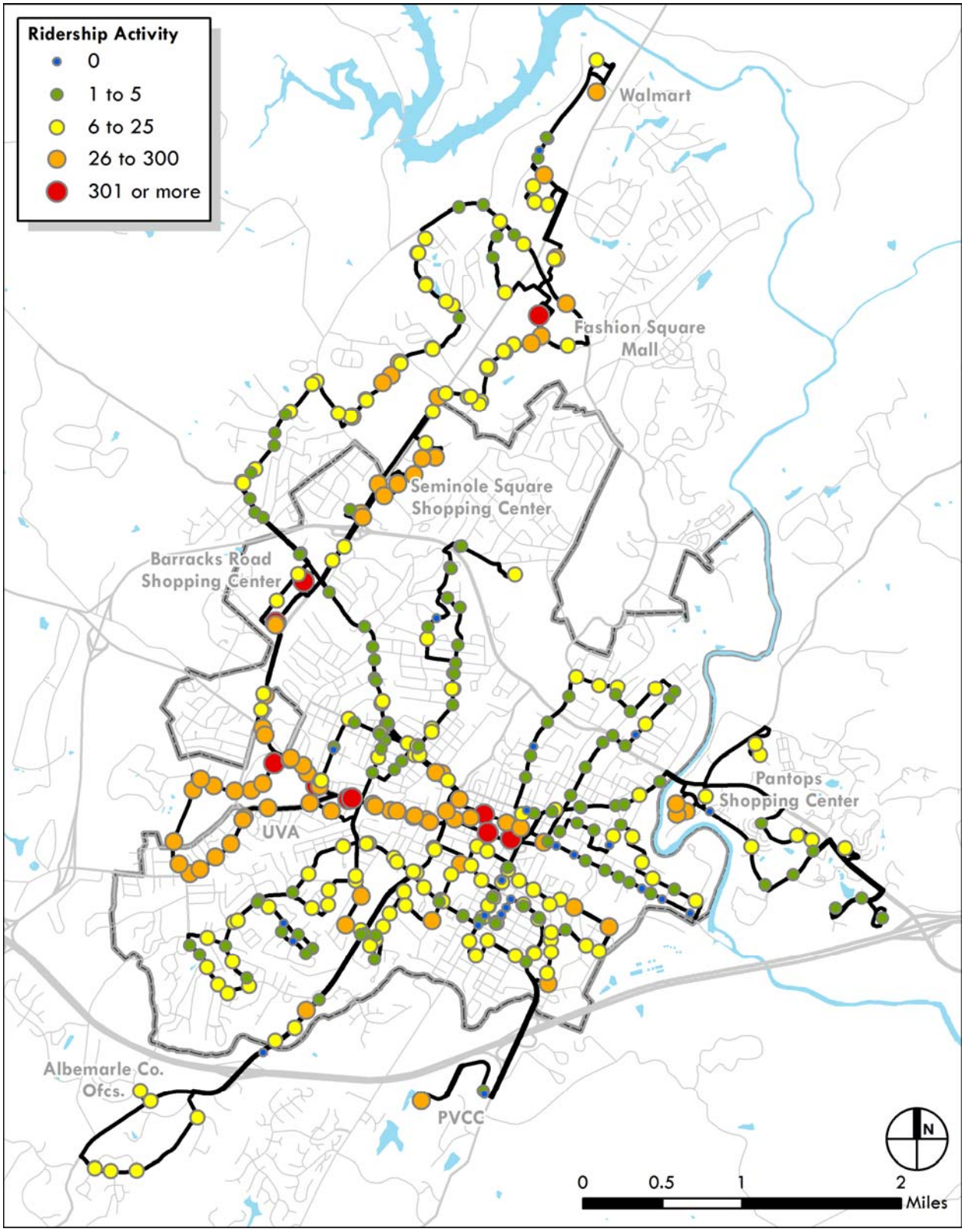


Finally, system ridership from the weekday ridecheck survey has been summed by bus stop. Figure 2-9 presents cumulative weekday ridership by stop. The stops with the highest number of boardings and alightings are outlined in Table 2-7. Cumulatively, these 11 stops account for 39% of the boarding and alighting activity within the entire CAT system.

Table 2-7
Most Utilized Bus Stops

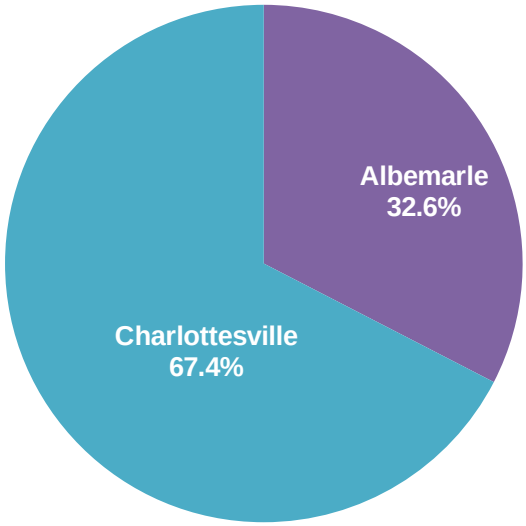
Stop Name	Total Ridership	Percent of Total
Downtown Transit Station	2,054	13.3%
Fashion Square Mall	754	4.9%
Barracks Road Shopping Center at CVS	450	2.9%
West Main St & 11th St SW	435	2.8%
East Market St at 2nd St NE	368	2.4%
Barracks Road Shopping Center at Kinkos	352	2.3%
University Ave at Women's Center	345	2.2%
West Main St & 11th St SW	335	2.2%
Barracks Road Shopping Center opposite CVS	321	2.1%
East Water St at 3rd St SE	308	2.0%
UVA Chapel	308	2.0%
Total	**6,030**	**39.0%**
Systemwide	**15,463**	**100.0%**

Figure 2-9
Cumulative Weekday Ridership by Bus Stop



Stop activity was also reviewed based on location within the City of Charlottesville as opposed to activity at stops in unincorporated Albemarle County (see Figure 2-10). Of the 15,463 boardings and alightings recorded during the weekday ridecheck, 10,426 occurred within the city limits. The remaining 5,037 occurred in the county. It is important to note that this measure does not necessarily suggest that nearly one-third of CAT's riders reside in Albemarle County. Rather, there is a healthy mix of cross-jurisdictional trips where Charlottesville residents have trip needs that start or end in Albemarle County and vice versa.

Figure 2-10
Ridership Activity by Jurisdiction



2.4 Ridership Productivity Measures

Ridership data from this project's ridecheck survey (conducted October 30 through November 6, 2010) was used to determine service productivity measures. Specifically, ridership productivity was measured on the basis of riders per revenue bus-hour, riders per revenue bus-mile and riders per bus trip for weekday, Saturday and Sunday ridership. Tables 2-8 through 2-10 present these measures and rankings by day of week and by route. Overall, ridership for CAT is productive. Systemwide productivity measures are as follows:

Weekdays	Weekday Riders per Bus-Hour	26.6
	Weekday Riders per Bus-Mile	2.5
	Weekday Riders per Bus Trip	18.1
Saturday	Saturday Riders per Bus-Hour	25.3
	Saturday Riders per Bus-Mile	2.3
	Saturday Riders per Bus Trip	16.4
Sunday	Weekday Riders per Bus-Hour	46.0
	Weekday Riders per Bus-Mile	4.0
	Weekday Riders per Bus Trip	24.3

The Free Trolley is consistently the best performing route on weekdays, Saturdays and Sundays in all productivity measures. Route 7 is the second best performing route on weekdays and is the 2nd or 3rd best performing route on Saturdays, depending on the productivity measure.

Table 2-8
CAT Weekday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	2,468	(1)	68	36.3	(1)	44.8	55.1	(1)	387.6	6.4	(1)
1A	1A East Market/PVCC	87	(12)	13	6.7	(13)	6.5	13.4	(12)	65	1.3	(12)
1B	1B PVCC	154	(11)	12	12.8	(8)	6	25.7	(4)	90	1.7	(7)
2A	2A Locust Ave	68	(14)	13	5.2	(14)	6.5	10.5	(14)	68.9	1.0	(14)
2B	2B Southwood	169	(9)	12	14.1	(6)	6	28.2	(3)	98.4	1.7	(6)
3	Belmont	243	(7)	20	12.2	(9)	10	24.3	(5)	94	2.6	(3)
4	UVA Hospital, Fry's Spring, Downtown	359	(4)	19	18.9	(4)	19	18.9	(8)	264.1	1.4	(11)
5	Walmart to Barracks Road	705	(3)	63	11.2	(10)	47.4	14.9	(10)	516.6	1.4	(10)
6	Ridge, UVA & Downtown	207	(8)	19	10.9	(11)	9.5	21.8	(6)	114	1.8	(4)
7	Downtown to Fashion Square	2,444	(2)	116	21.1	(2)	76.8	31.8	(2)	765.6	3.2	(2)
8	Seminole & Downtown	274	(5)	19	14.4	(5)	19	14.4	(11)	161.5	1.7	(8)
9	Charlottesville High School	156	(10)	12	13.0	(7)	12	13.0	(13)	129.6	1.2	(13)
10	Pantops	267	(6)	13	20.5	(3)	13	20.5	(7)	153.4	1.7	(5)
21	(Night) Belmont	42	(15)	10	4.2	(16)	5	8.4	(16)	49	0.9	(15)
22	(Night) Prospect Ave, UVA Hosp.	83	(13)	10	8.3	(12)	5	16.6	(9)	56	1.5	(9)
23	(Night) PVCC	23	(16)	5	4.6	(15)	2.5	9.2	(15)	38	0.6	(16)
24	(Night) Pantops	12	(17)	5	2.4	(17)	2.5	4.8	(17)	27.5	0.4	(17)
TOTAL WEEKDAY		**7,761**		**429**	**18.1**		**291.5**	**26.6**		**3079.2**	**2.5**	

Table 2-9
CAT Saturday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	2,658	(1)	68	39.1	(1)	44.8	59.3	(1)	387.6	6.9	(1)
1A	1A East Market/PVCC	53	(11)	13	4.1	(11)	6.5	8.2	(10)	65	0.8	(9)
1B	1B PVCC	25	(13)	12	2.1	(16)	6	4.2	(16)	90	0.3	(16)
2A	2A Locust Ave	43	(12)	13	3.3	(13)	6.5	6.6	(13)	68.9	0.6	(13)
2B	2B Southwood	105	(8)	12	8.8	(8)	6	17.5	(5)	98.4	1.1	(8)
3	Belmont	169	(5)	13	13.0	(5)	6.5	26.0	(3)	61.1	2.8	(2)
4	UVA Hospital, Fry's Spring, Downtown	125	(7)	12	10.4	(7)	12	10.4	(9)	166.8	0.7	(10)
5 SB	Walmart to Barracks Road	759	(3)	63	12.0	(6)	47.4	16.0	(6)	516.6	1.5	(6)
6	Ridge, UVA & Downtown	93	(9)	12	7.8	(9)	6	15.5	(7)	72	1.3	(7)
7 NB	Downtown to Fashion Square	2,011	(2)	116	17.3	(3)	67.3	29.9	(2)	765.6	2.6	(3)
8	Seminole & Downtown	163	(6)	12	13.6	(4)	12	13.6	(8)	102	1.6	(4)
9	Charlottesville High School	85	(10)	12	7.1	(10)	12	7.1	(12)	129.6	0.7	(11)
10	Pantops	229	(4)	13	17.6	(2)	13	17.6	(4)	153.4	1.5	(5)
21	(Night) Belmont	21	(15)	10	2.1	(15)	5	4.2	(15)	49	0.4	(15)
22	(Night) Prospect Ave, UVA Hosp.	25	(13)	10	2.5	(14)	5	5.0	(14)	56	0.4	(14)
23	(Night) PVCC	9	(17)	5	1.8	(17)	2.5	3.6	(17)	38	0.2	(17)
24	(Night) Pantops	18	(16)	5	3.6	(12)	2.5	7.2	(11)	27.5	0.7	(12)
TOTAL SATURDAY		**6,591**		**401**	**16.4**		**261**	**25.3**		**2847.5**	**2.3**	

Table 2-10
CAT Sunday Ridership Productivity by Route

Route	Route Name	Boardings	Ranking	Daily Trips	Riders/ Trip	Ranking	Daily Rev.-Hrs.	Riders/ Rev.-Hr.	Ranking	Daily Rev.-Mi's.	Riders/ Rev.-Mi.	Ranking
Trolley	Free Trolley	714	(1)	16	44.6	(1)	9.8	72.9	(1)	91.2	7.8	(1)
7	Downtown to Fashion Square	649	(2)	40	16.2	(2)	19.8	32.8	(2)	250.8	2.6	(2)
TOTAL SUNDAY		**1,363**		**56**	**24.3**		**29.6**	**46.0**		**342**	**4.0**	

2.5 Fare Payment

CAT's current fare structure is as follows:

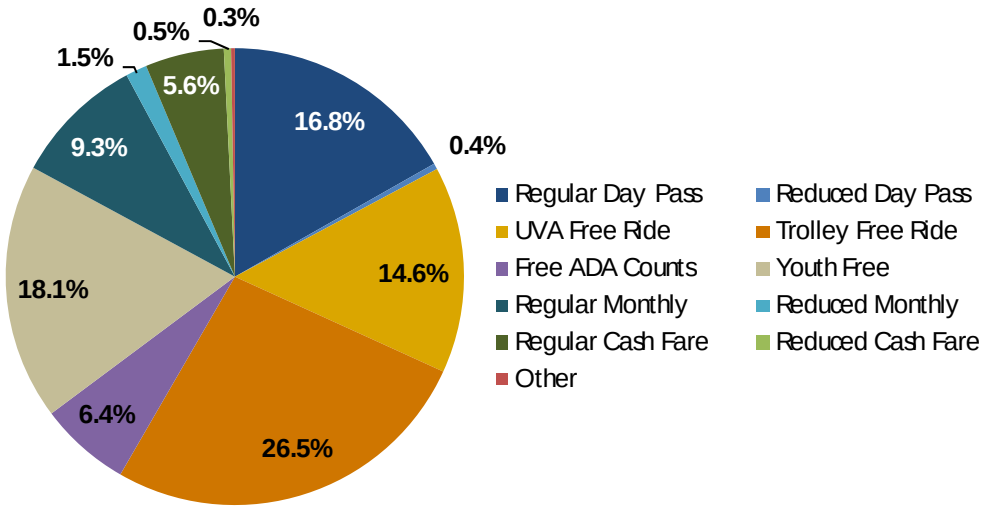
Payment Type	Fare Category	Charge
Cash	One-Way Trip	$0.75
	Reduced Fare*	$0.35
	Child	Free (age 5 and under)
Passes	Day Pass	$1.50
	Reduced Fare Day Pass*	$0.75
	Monthly Pass	$20.00
	Qualifying Disability**	Free

* *Age 65 and older, or disabled*
** *CAT paratransit ID card required*

UVA students, faculty and staff can ride for free by showing a valid UVA ID card through a pre-paid arrangement between CAT and the University of Virginia. Charlottesville High School students as well as all Trolley route riders also ride free.

Figure 2-11 presents a breakdown of October 2010 ridership by fare category. Over one-fourth of all ridership was associated with the Free Trolley route. The next highest categories were riders in the Youth Free category, followed by UVA free riders. Combined, these three free ride categories account for 59% of CAT's monthly ridership. The regular-fare day pass accounts for the largest category of fare-paying ridership.

Figure 2-11
October 2010 CAT System Ridership by Fare Category



3 Charlottesville Area Transit Route Profiles

The following pages present detailed assessments of route characteristics, strengths and weaknesses for each of CAT's fixed routes. Each route profile presents the following information:

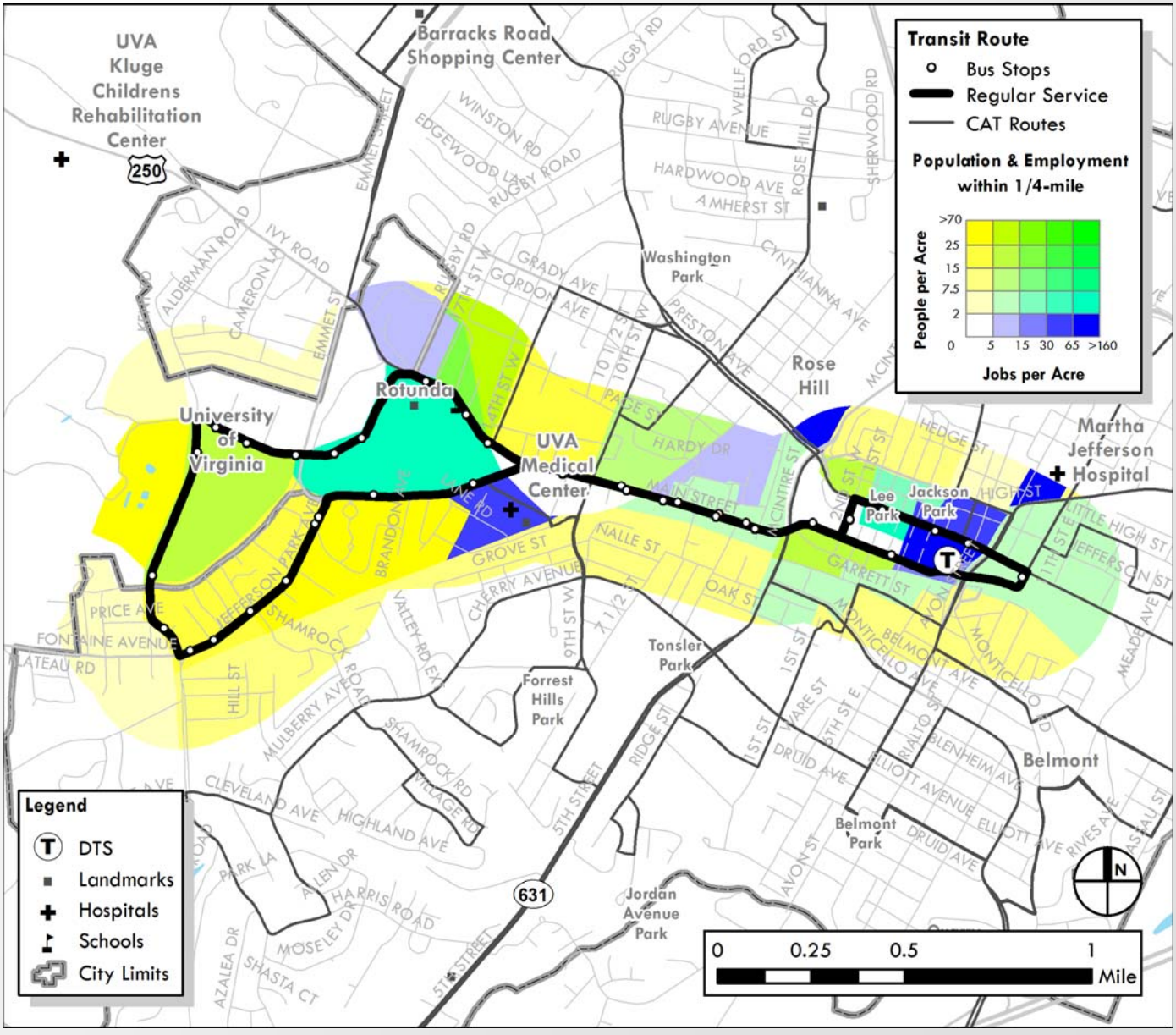
- A "snapshot" of route service characteristics and productivity measures;
- A map of land use characteristics along the route alignment;
- A description of the existing route alignment;
- Key route issues and observations from fieldwork and CAT route information, including:
  - Alignment
  - Bus Stops
  - Schedule/Span of Service
  - Cycle/Layover Times
  - Route Transfers
- Historical monthly ridership characteristics over the previous six years (same month);
- Historical monthly ridership characteristics over the previous 12 months;
- Historical ridership by fare category; and
- Current ridership characteristics from the ridecheck survey including:
  - Observations
  - Graphs showing boardings by time of day
  - Maps showing daily ridership at each stop
  - Graphs showing weekday boardings, alightings, and average line loads by stop and direction
  - Graphs showing on-time performance by time period

Charlottesville Area Transit – Free Trolley

The **Free Trolley** is a unique circulator service that connects downtown Charlottesville with the University of Virginia campus via West Main Street. It is also one of only two routes that operate on Sundays.

Of the 17 routes in the CAT system, the Free Trolley is CAT's most productive route seven days a week.

Free Trolley	Full Service Weekday		Saturday		Sunday	
Route Characteristics						
Hours of Operation	6:40 a.m. - 11:48 p.m.		6:40 a.m. - 11:48 p.m.		8:00 a.m. - 5:42 p.m.	
Frequency (Pk/Mid/Eve)	15-15-15		15-15-15		30-45-n/a	
Cycle Time (min)	30		30		30	
Layover Time (min)	3		3		3	
Route Statistics						
Round Trips	68		68		16	
Daily Revenue-Hours	44.8		44.8		9.8	
Daily Revenue-Miles	387.6		387.6		91.2	
Peak Buses	3.0		3.0		1.0	
Route Productivity						
Boardings (Rank)	2,468	(1)	2,658	(1)	714	(1)
Riders/Rev.-Hr. (Rank)	55.1	(1)	59.3	(1)	72.9	(1)
Riders/Rev.-Mi. (Rank)	6.4	(1)	6.9	(1)	7.8	(1)
Riders/Trip (Rank)	36.3	(1)	39.1	(1)	44.6	(1)



Description of Existing Alignment

The Free Trolley begins at the Downtown Transit Station (DTS) on Water Street and travels west to Main Street and continues to the UVA campus. At Jefferson Park Avenue the route turns left, passing through the UVA Medical Center. The route loops back to downtown Charlottesville by turning right on Maury Avenue, right on McCormick Road and right on University Avenue. When approaching downtown, the Free Trolley returns to the DTS via 2nd Street, Market Street, 10th Street and Water Street.

The Free Trolley primarily serves commercial and retail interests as well as the UVA throughout the length of its route. Major destinations along Route 7 include:

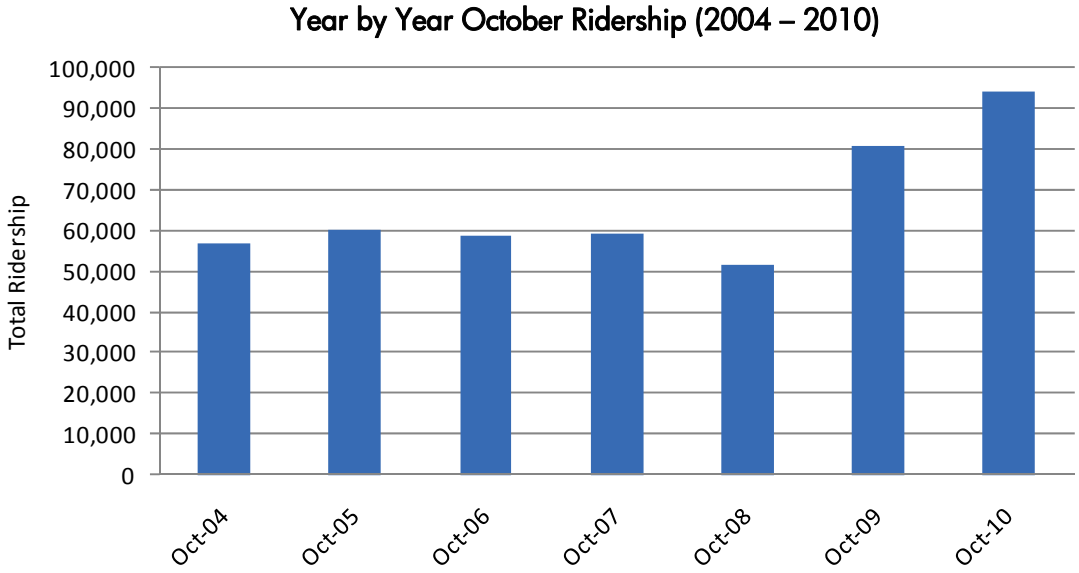
- Amtrak Station
- Federal Courthouse
- West Main Street
- University of Virginia
- Charlottesville City Hall

Key Route Issues and Observations

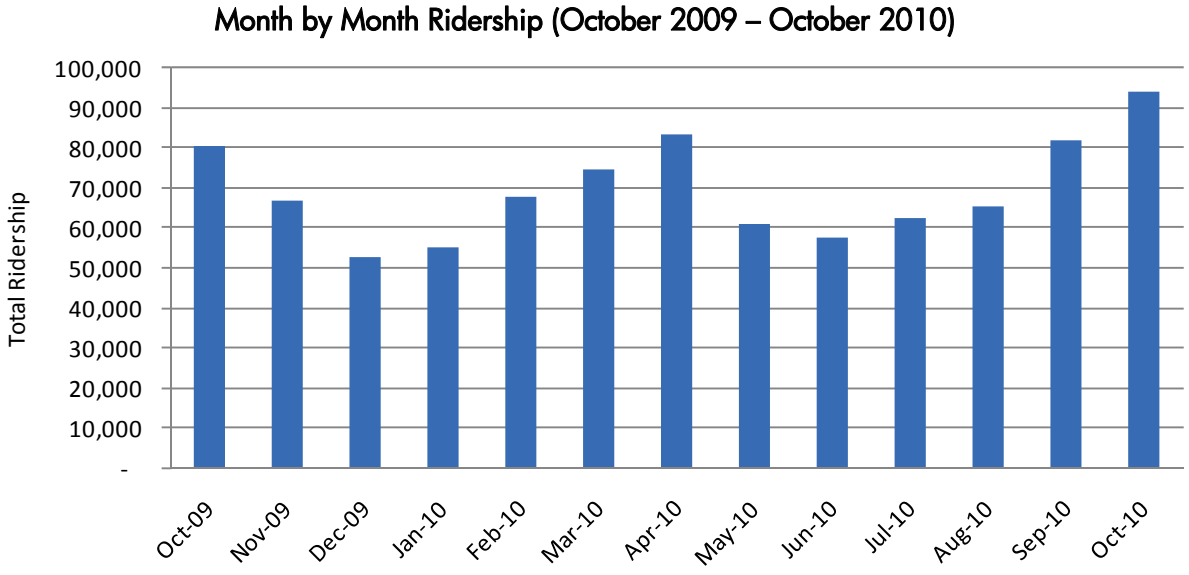
- *Alignment* – The Free Trolley is primarily linear and bi-directional. However, there are segments at each terminus where service is operated in only one direction. This may be particularly problematic for trips that originate and end within the UVA loop.
- *Stops* – Bus stops along the route are consistently spaced as demand dictates.
- *Schedule/Span of Service* – The Free Trolley operates Monday through Saturday from 6:40 a.m. until 11:48 p.m. (the last scheduled trip departs the DTS at 11:30 p.m.) at 15-minute frequency. Sunday service is also offered at 30-minute frequency from 8:00 a.m. until 12:27 p.m. At 12:30 p.m., headways are broadened to 45 minutes until the end of service at 5:42 p.m. (last trip departs DTS at 5:00 p.m.).
- *Cycle/Layover Times* – The Free Trolley is one of only two routes that have variable running times. On weekdays until 7:45 a.m., the Free Trolley has a 30-minute cycle time and requires two buses to operate at 15-minute frequency. On this schedule there are 27 minutes of scheduled running time with three minutes of scheduled recovery time at the DTS. After 7:45 a.m. another bus is added, allowing for a 45-minute cycle time. On this schedule there are 40 minutes of scheduled running time with five minutes of scheduled recovery time at the DTS. After 7:00 p.m., running times are reduced back to the morning allocation (30-minute round trip cycle). Sunday running times also operate on a 30-minute cycle until 12:27 p.m. After 12:30 p.m., each round trip is allocated 45 minutes.
- *Route Transfers* – The Free Trolley connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities with UTS occur as the route circulates through the UVA campus. In addition, the Free Trolley also connects with Routes 4, 7 and 9 along West Main Street.

Historical Ridership Characteristics

A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on the Free Trolley has been steady until 2009. In 2009 and 2010, ridership increased dramatically.



A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. The fall and spring months show the highest ridership, which is likely attributed to student ridership and favorable weather.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for the Free Trolley are as follows:

Trolley Ridecheck Results Summary

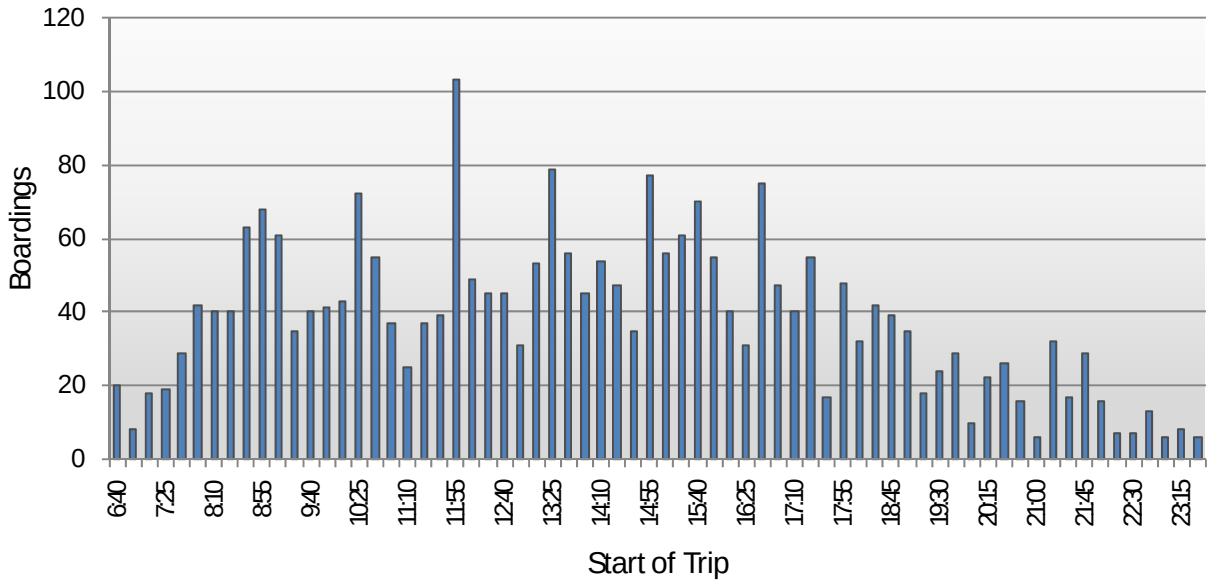
Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
347	1,204	669	366	2,586	2,807	756
Maximum Load						
42	40	33	21	42	51	28
Timepoints Reached On Time						
88%	81%	72%	89%	82%	73%	63%

On time defined as between 1 minute early and 5 minutes late

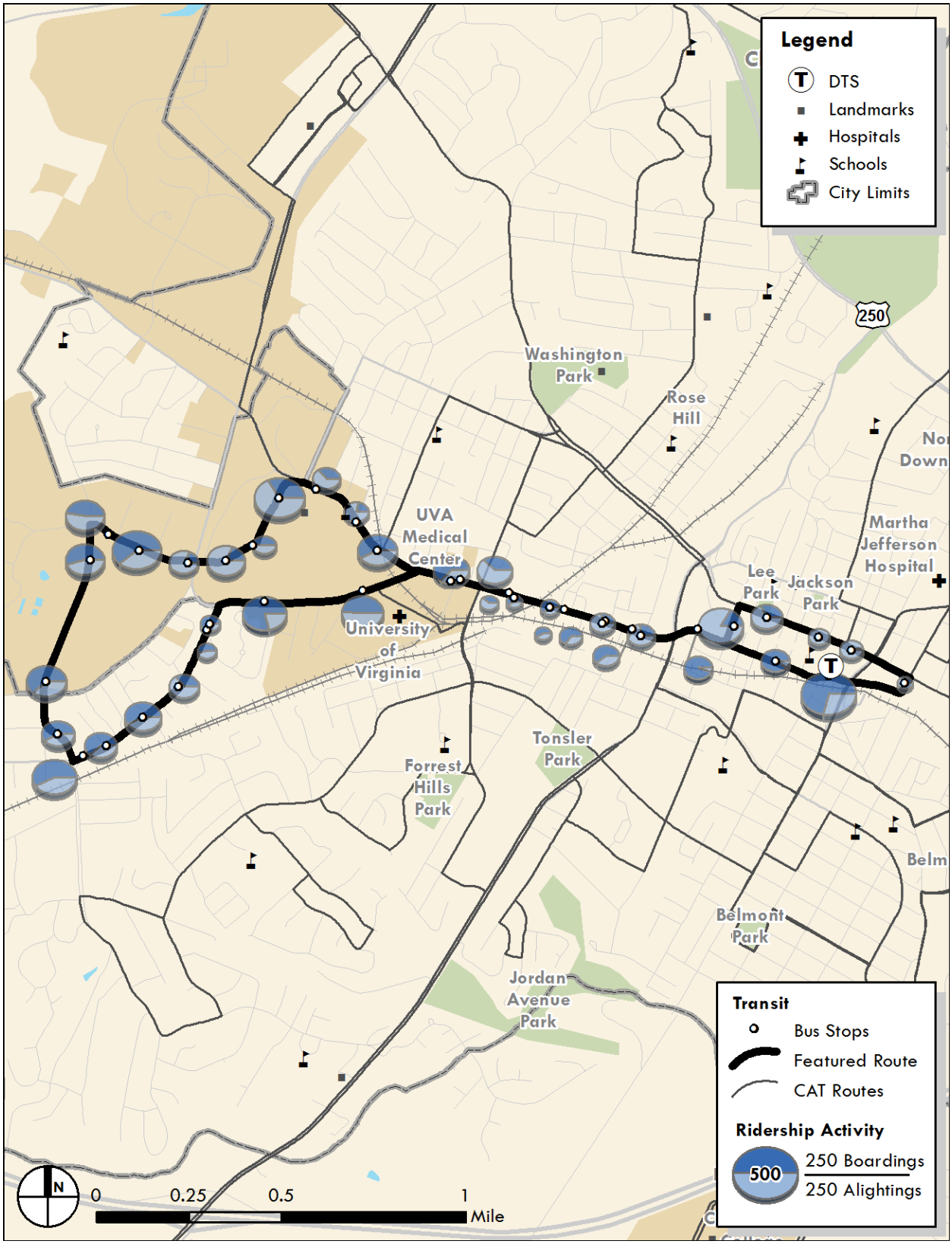
Weekday Observations

- Ridership on the Free Trolley is highest during the midday hours. Afternoon peaks carried more riders than morning peaks.
- The maximum observed load was 42 passengers and occurred during the morning hours. The lowest maximum loads were observed during the evening hours.
- The 11:55 a.m. trip carried the most passengers. The 1:25, 2:55, and 5:40 p.m. trips were also strong performers. The lowest trips of the day were primarily during the late evening hours.
- Outside of the DTS, stops near the Pedestrian Mall, and throughout the UVA campus were most popular with riders.
- On-time performance was met 82% of the time throughout the day. The morning and evening hours were better performers. Midday and afternoon time periods, when pedestrian traffic is highest around the UVA campus, were the most problematic. Buses rarely operate early during these times.

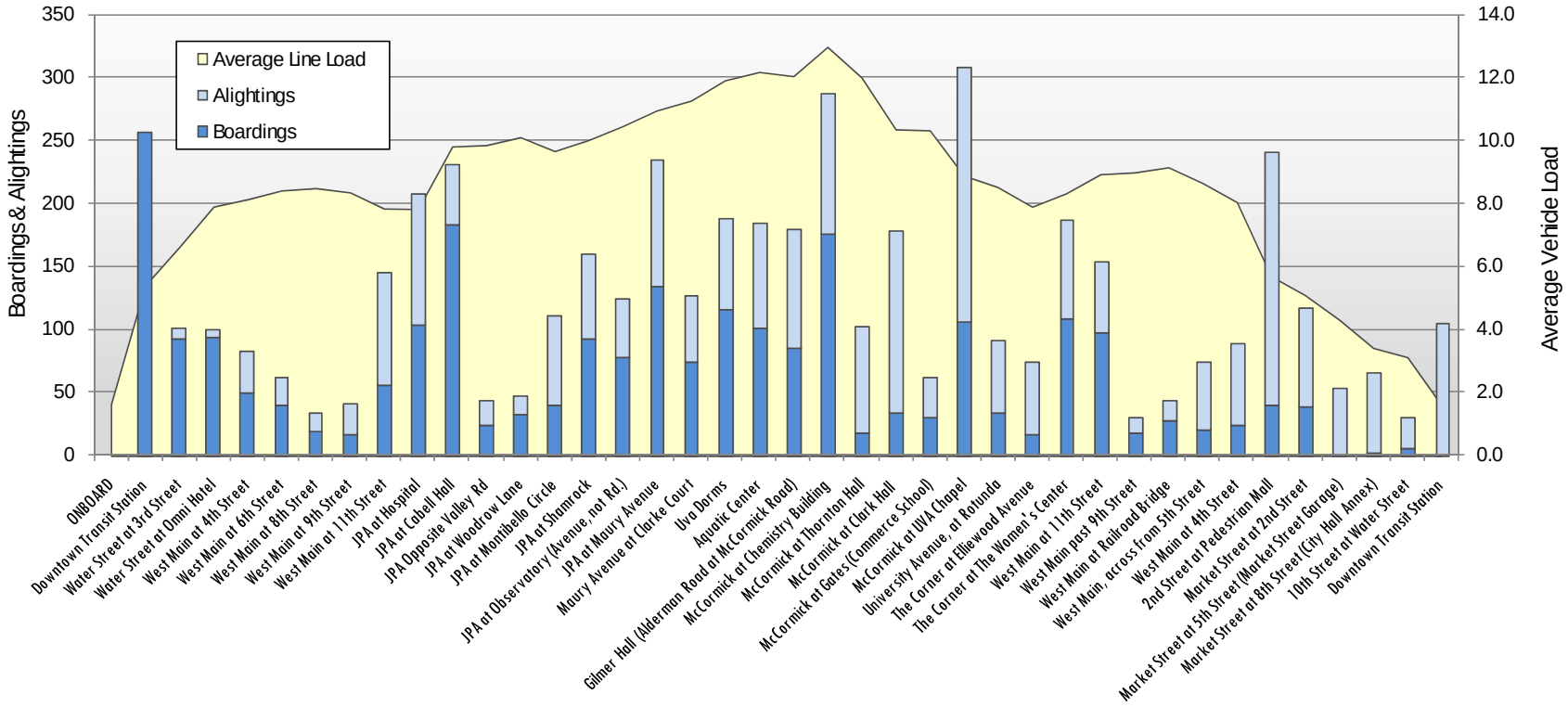
Weekday Boardings by Time of Day



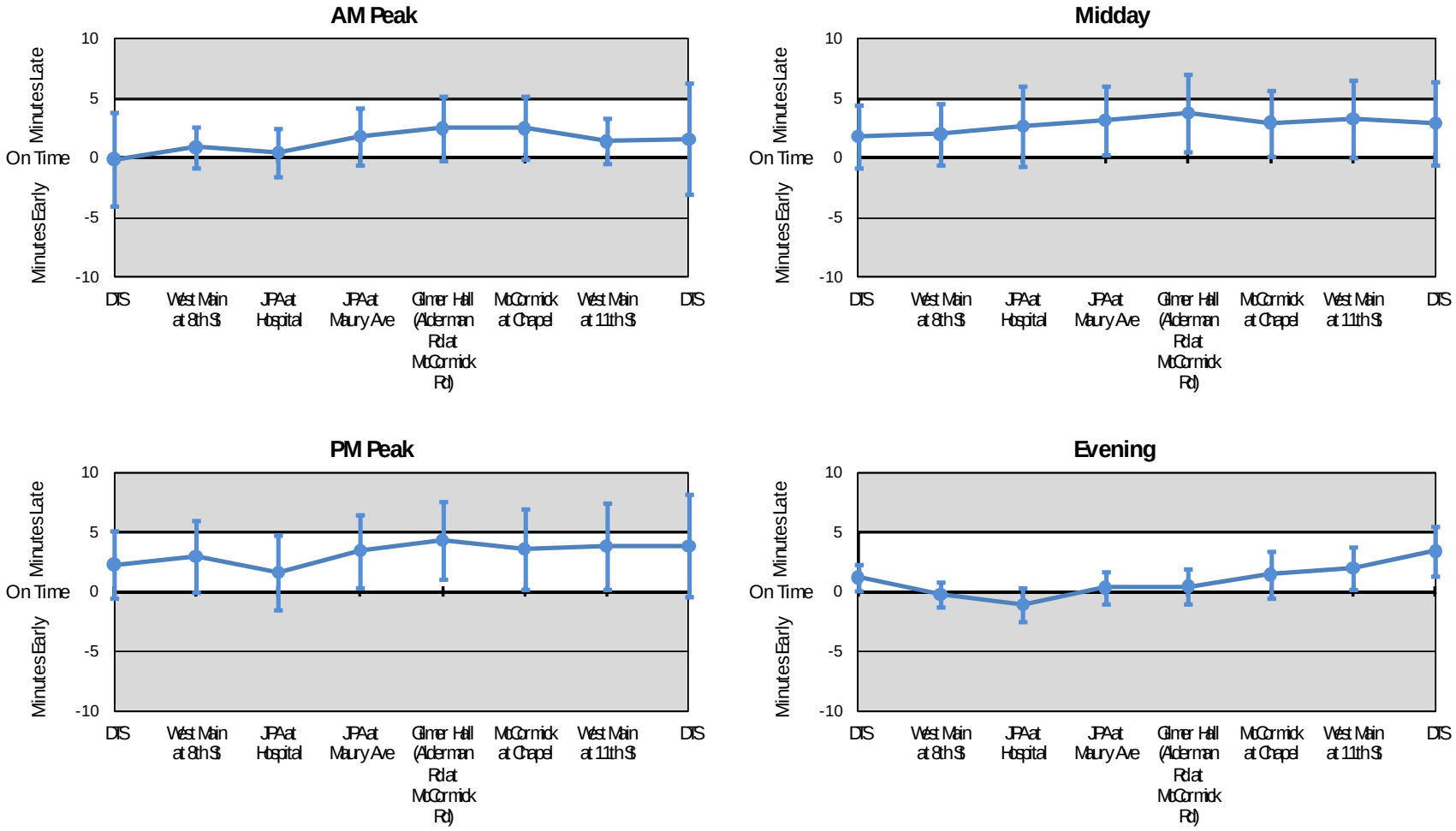
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads



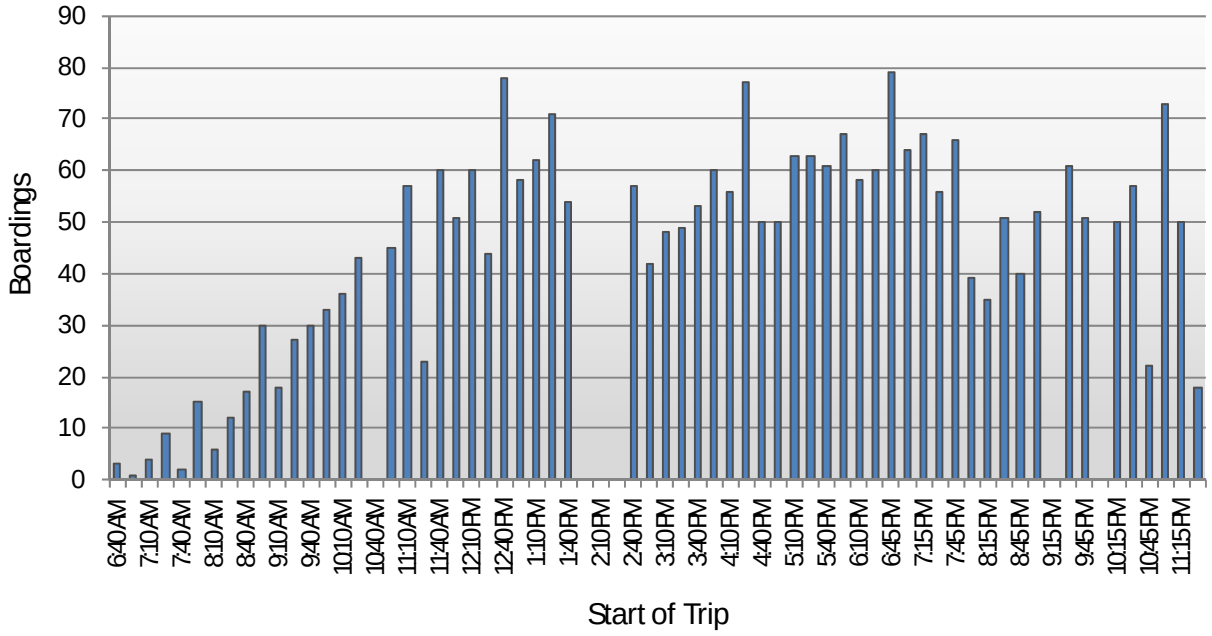
Weekday On-Time Performance by Period



Saturday Observations

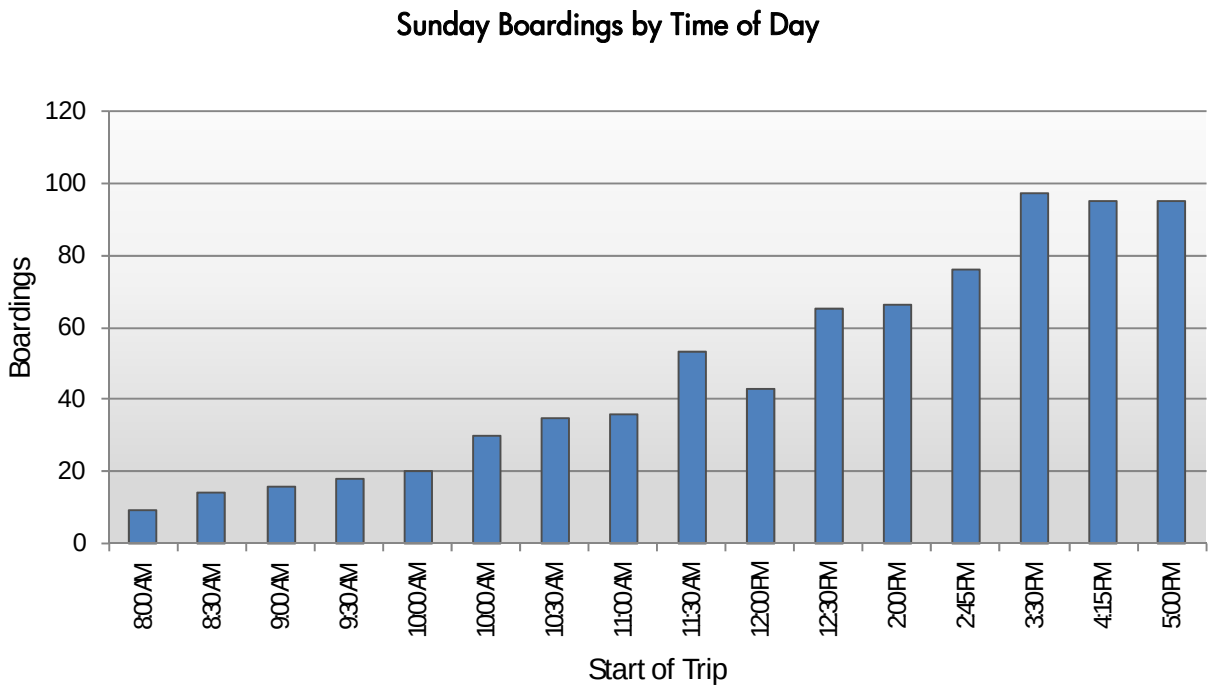
- The busiest trips of the day occur during the midday and afternoon hours.
- Saturday trips carry 108% of the ridership levels drawn on weekdays. This is one of only two routes in the CAT system that carried more riders on Saturdays than on weekdays.
- The maximum load for Saturday trips was 51, which again was higher than what was observed on the weekday.
- Saturday trips were on-time 73% of the time. The morning and evening hours were better performers. Midday and afternoon time periods, when pedestrian traffic is highest around the UVA campus, were the most problematic.
- Due to a scheduling error, six of the 68 trips were not surveyed. Those trips were the 10:40 a.m., 1:55 p.m., 2:10, p.m., 2:25 p.m., 9:15 p.m. and 10:00 p.m. trips.

Saturday Boardings by Time of Day



Sunday Observations

- The busiest trips of the day occur during the afternoon hours, suggesting strong potential for late afternoon/early evening service.
- Sunday trips carry 29% of the ridership levels drawn on weekdays and 27% of the ridership levels drawn on Saturdays.
- The maximum load for Sunday trips was 28.
- Sunday trips were on-time 63% of the time. Trips in the morning hours were often early.

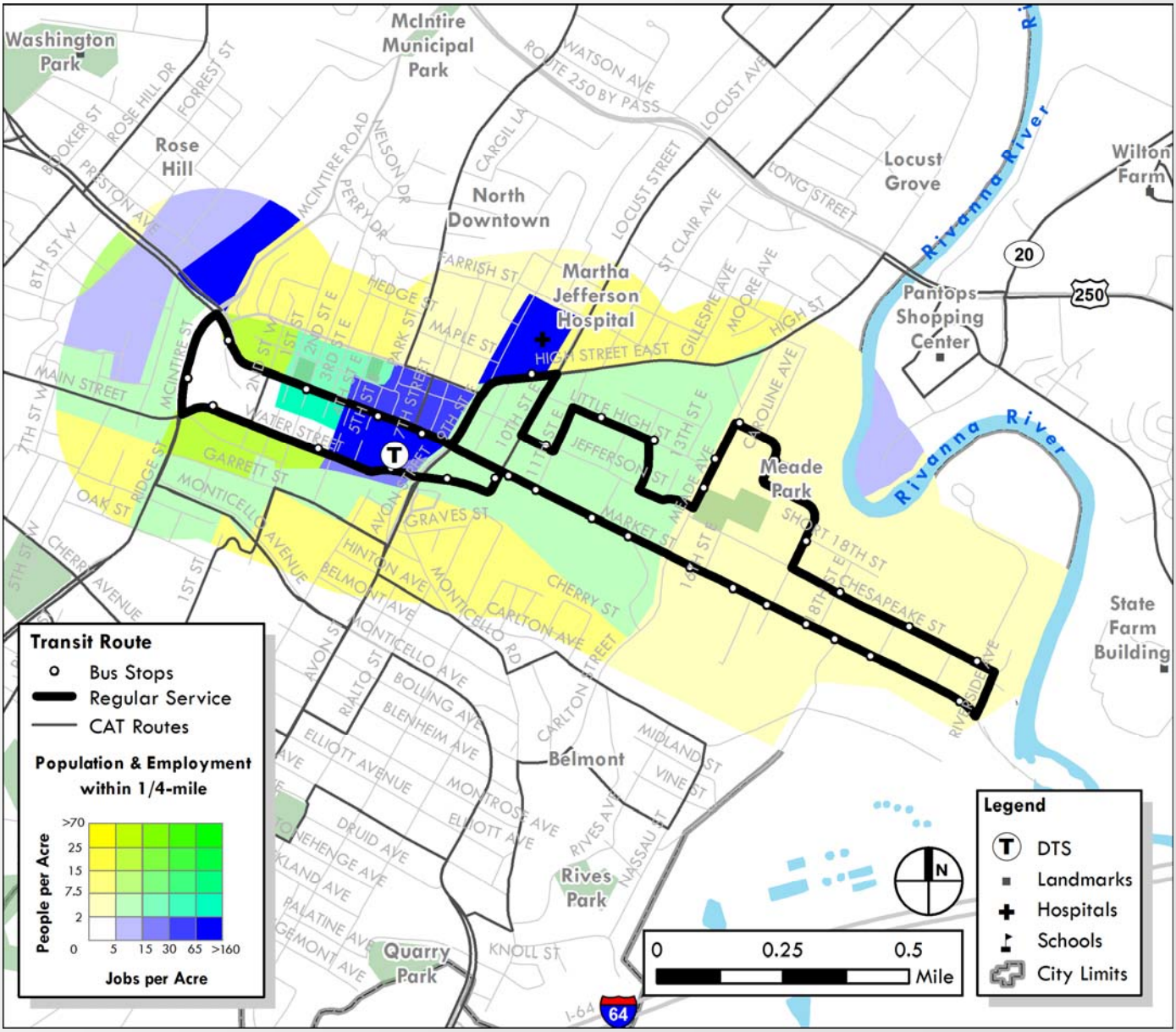


Charlottesville Area Transit – Route 1A – East Market

Route 1A operates as one-direction circulator route serving the eastern portions of Market Street and the Mead Park neighborhood. The route is also one of three that serves Martha Jefferson Hospital. As with most of CAT's downtown routes, Route 1A provides circulation along the perimeter of the pedestrian mall on its outbound trip via Water Street, McIntyre Street and Market Street.

Of the 17 routes in the CAT system, Route 1A performs below average on weekdays and slightly better on Saturdays.

Route 1A	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:20 a.m. - 6:42 p.m.		6:20 a.m. - 6:42 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	8		8	
Route Statistics				
Round Trips	13		13	
Daily Revenue-Hours	6.5		6.5	
Daily Revenue-Miles	65		65	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	87	(12)	53	(11)
Riders/Rev.-Hr. (Rank)	13.4	(12)	8.2	(10)
Riders/Rev.-Mi. (Rank)	1.3	(12)	0.8	(9)
Riders/Trip (Rank)	6.7	(13)	4.1	(11)



Description of Existing Alignment

Route 1A begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge McIntyre Road, north to Preston Avenue and then east on Market Street. At Riverside Avenue, the route turns north and then begins the return trip through Meade Park via Chesapeake Street, Fairway Avenue and Meade Avenue. At Jefferson Street, Route 1A turns right and makes its way to Martha Jefferson Hospital via 12th Street, Little High Street, 11th Street, Jefferson Street and 10th Street. At High Street the route travels west, returning to the DTS by way of 9th Street, Market Street, 10th Street and Water Street.

Route 1A serves residential interests on its easternmost end with more commercial interests closer into town and near the hospital. Major destinations along Route 1A include:

- Federal Courthouse
- Charlottesville City Hall
- Mary Williams Community Center
- Meade Park and Onesty Pool
- Martha Jefferson Hospital

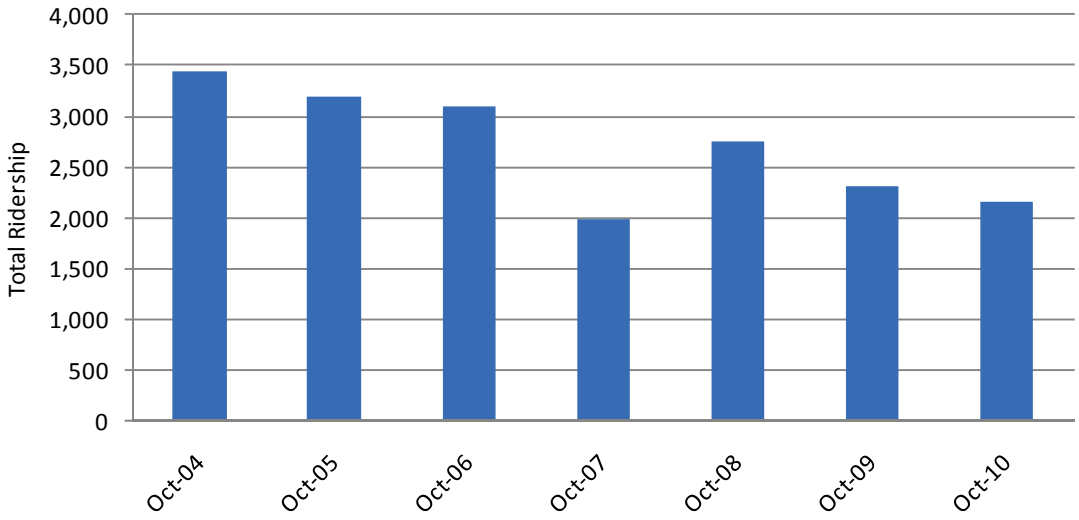
Key Route Issues and Observations

- *Alignment* – Route 1A is comprised of two one-way loops, configured in a "figure-eight" alignment. Part of this alignment is forced by the placement of the DTS and the need to circulate around the perimeter of the pedestrian mall to return east. The larger loop along the eastern portion of the alignment is fairly direct as it travels Market Street. However, the return routing is circuitous as it meanders through the Meade Park community. Travel speeds along these segments may be challenging as drivers must navigate speed humps, a one-lane culvert bridge, and narrow roadways associated with these older established neighborhoods.
- *Stops* – Bus stops along Route 1A appear to be adequately spaced every two to three blocks through the downtown circulator alignment. As the route travels further east on Market Street, stops are much more closely spaced.
- *Schedule/Span of Service* – Route 1A operates Monday through Saturday from 6:20 a.m. until 6:42 p.m. (the last scheduled trip departs DTS at 6:20 p.m.) at 60-minute frequency. Night service and Sunday service are not offered.
- *Cycle/Layover Times* – Route 1A has a 25-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 1B at the DTS. There are 22 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure as Route 1B.
- *Route Transfers* – Route 1A connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the downtown pedestrian mall. Route 1A also intersects with Routes 2A and 10 near Martha Jefferson Hospital.

Historical Ridership Characteristics

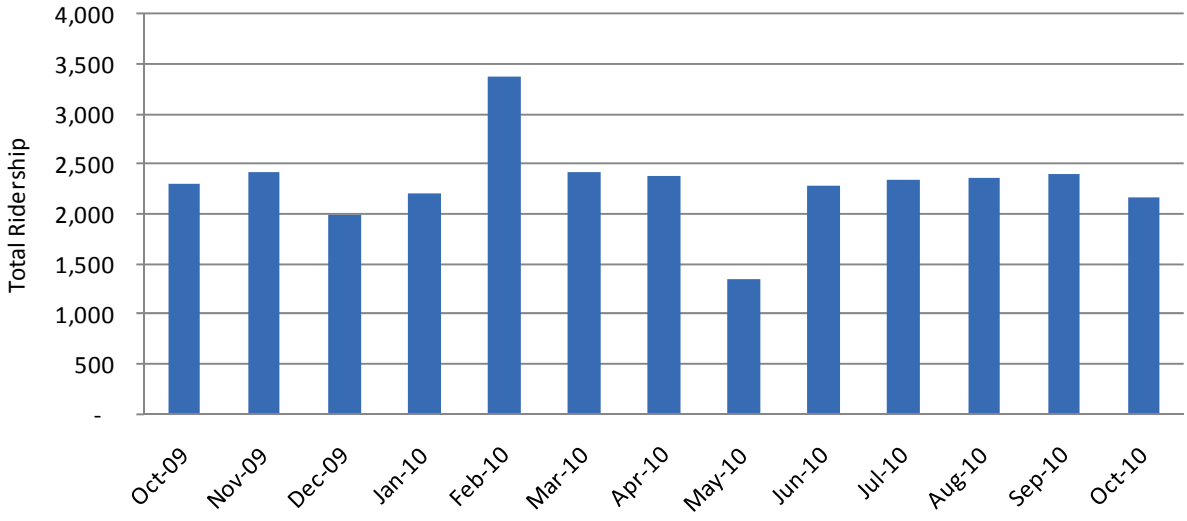
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. It is important to note that starting in 2007, ridership for Routes 1A and 1B were recorded separately. Thus, ridership from prior to 2007 reflects higher than the more recent years since it also includes Route 1B.

Year by Year October Ridership (2004 – 2010)



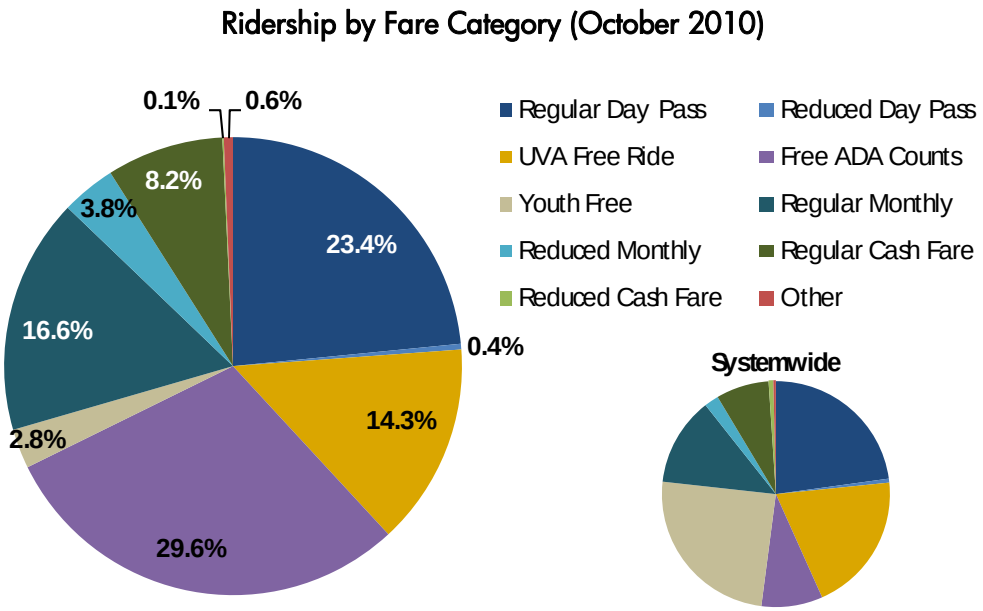
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Despite being the shortest month of the year, February appears to be Route 1A's strongest month. May appears to be the weakest month. All other months maintain consistent ridership levels ranging between 2,000 and 2,500 boardings.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Free ADA riders accounted for the most boardings with nearly 30%; considerably higher than reported systemwide. The next highest category was Full-Fare Day Passes (23.4%) followed by Full-Fare Monthly Passes (16.6%) and UVA riders (14.3%). Only 8.2% of all riders paid the adult cash fare, similar to what was observed systemwide. Youth ridership was considerably lower than systemwide.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 1A are as follows:

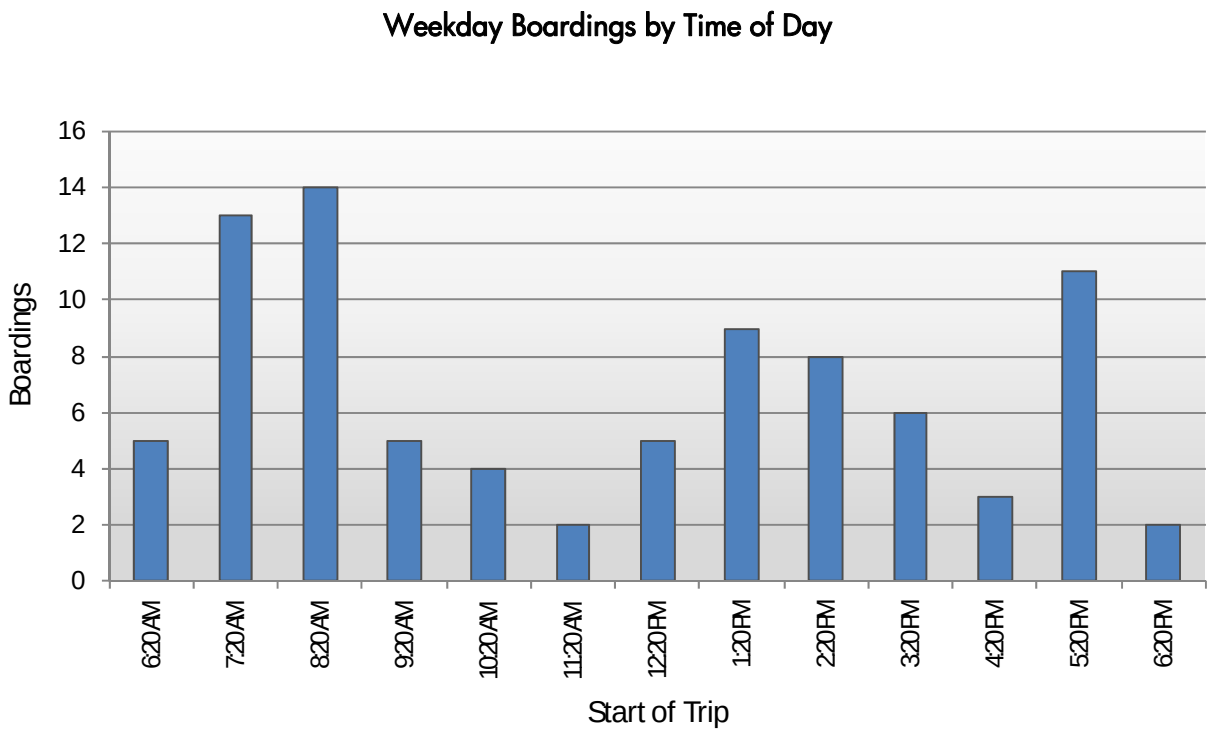
Route 1A Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
32	33	22	n/a	87	53	n/a
Maximum Load						
12	6	10	n/a	12	6	n/a
Timepoints Reached On Time						
93%	90%	90%	n/a	91%	80%	n/a

On Time is defined as arriving between 1 minute early and 5 minutes late

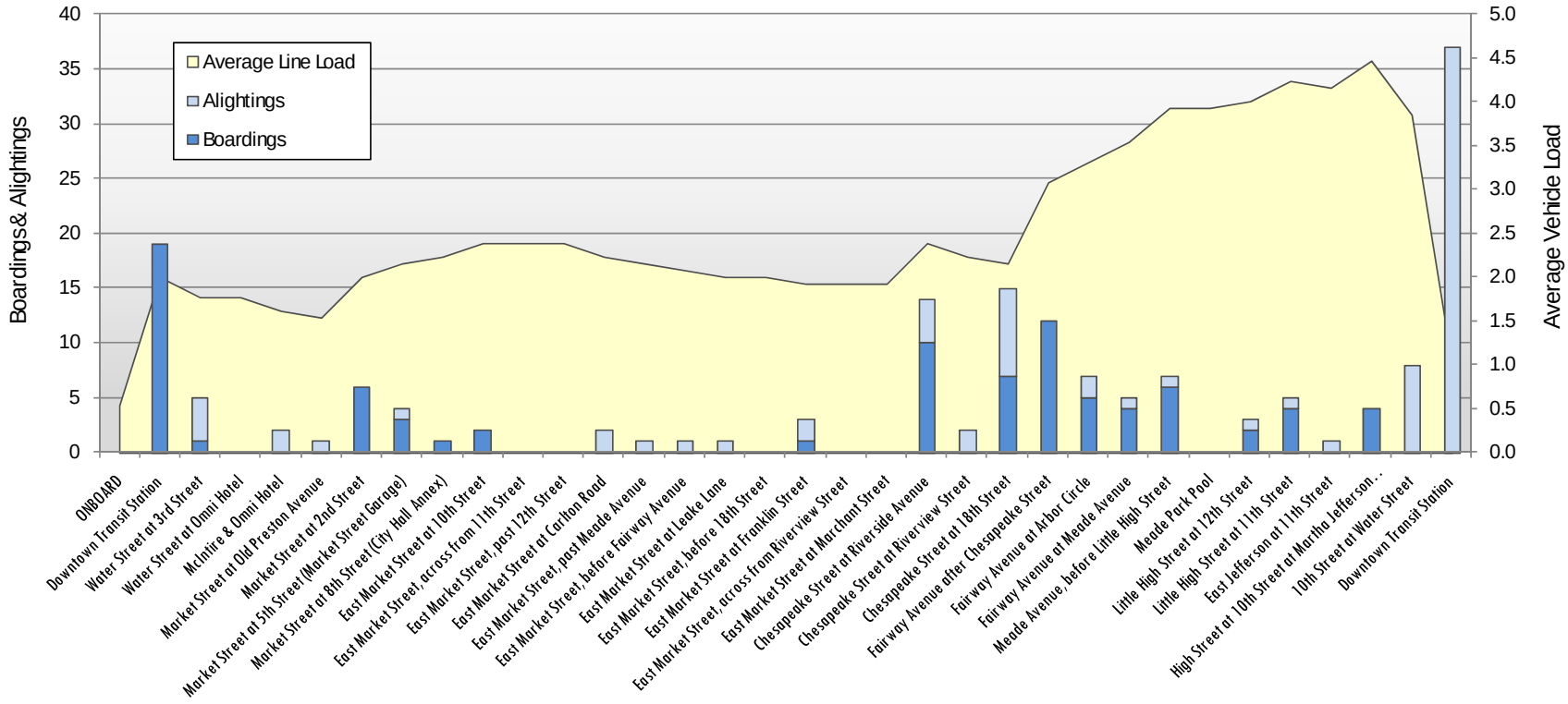
Weekday Observations

- Ridership on Route 1A is highest during the morning peak.
- The maximum observed load was 12 passengers and occurred during the morning peak period. The midday peak period had the lowest maximum loads with the highest recording only six riders.
- The 8:20 and 7:20 a.m. trips carried the most passengers followed by the 5:20 p.m. trip. The 11:20 a.m. and 6:20 p.m. (last trip of the day) recorded the fewest passengers.
- The DTS is the highest volume stop on Route 1A. The next strongest stops were Chesapeake Street & Riverside Avenue and Chesapeake Street & 18th Street. Stops along East Market Street saw relatively few boardings or alightings.
- On-time performance was met 91% of the time throughout the day. On-time performance during the morning periods was slightly better than other times. Trips throughout the day were approximately 1-3 minutes late. However, these times were well recovered by the time the bus returned to the DTS.

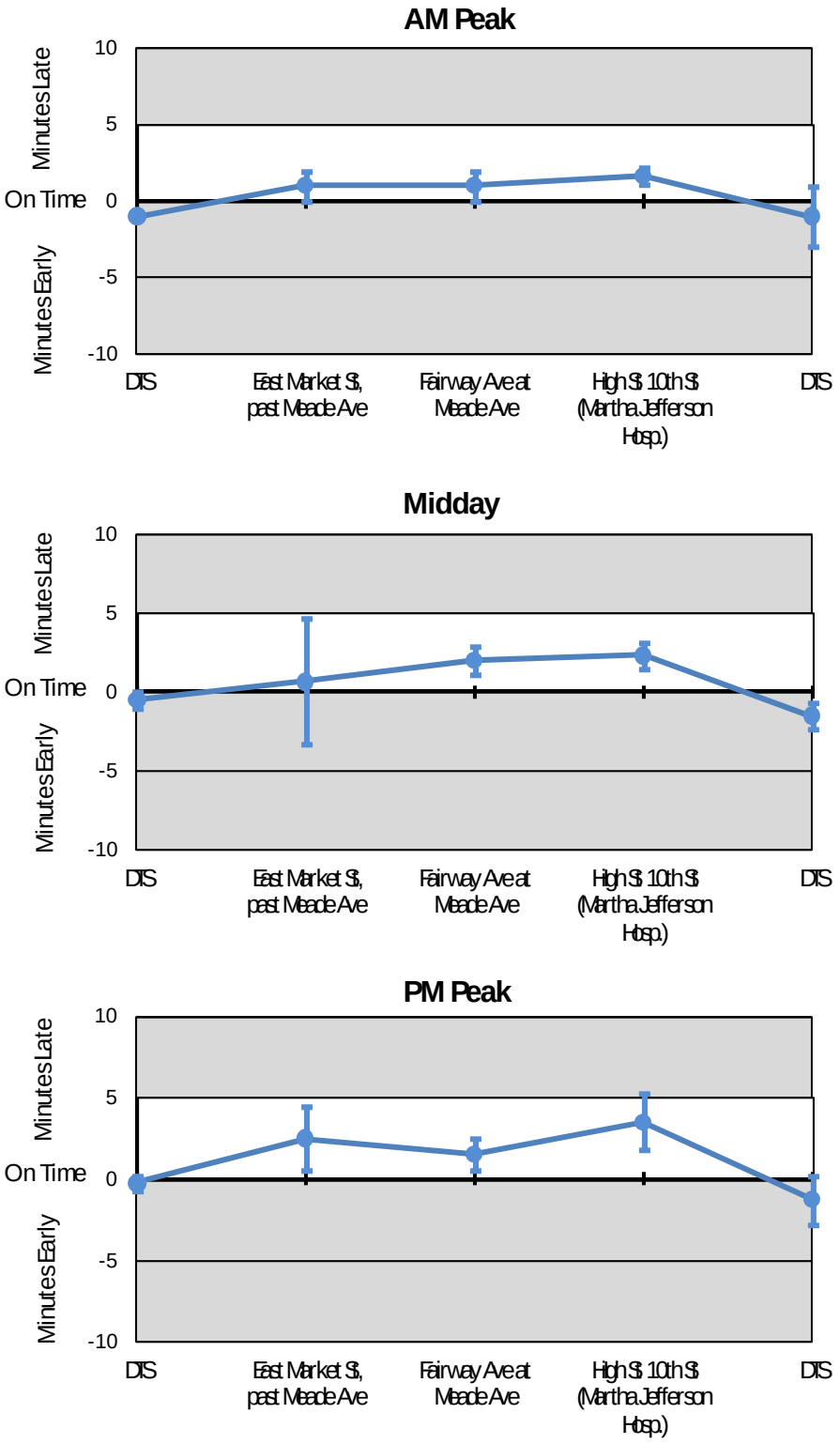

Weekday Boardings by Time of Day
Boardings
16
14
12
10
8
6
4
2
0
6:20 AM
7:20 AM
8:20 AM
9:20 AM
10:20 AM
11:20 AM
12:20 PM
1:20 PM
2:20 PM
3:20 PM
4:20 PM
5:20 PM
6:20 PM
Start of Trip

Weekday Ridership Activity

Weekday Ridership by Stop and Average Line Loads

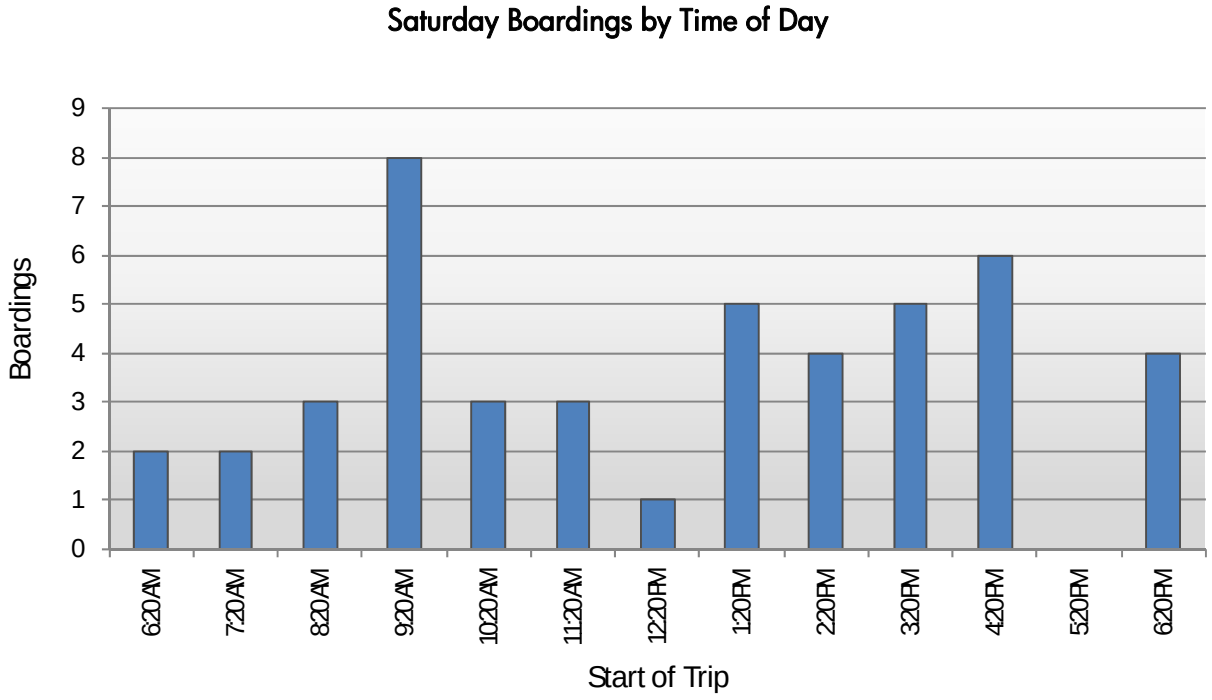


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the day was at 9:20 a.m. The afternoon trips were also better utilized.
- Saturday trips carry about 61% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was six; the same as was noted as the maximum load during the weekday midday period.
- Saturday trips were on-time 80% of the time. Trips in the morning were observed to run early while trips in the midday and afternoon tend to run late.

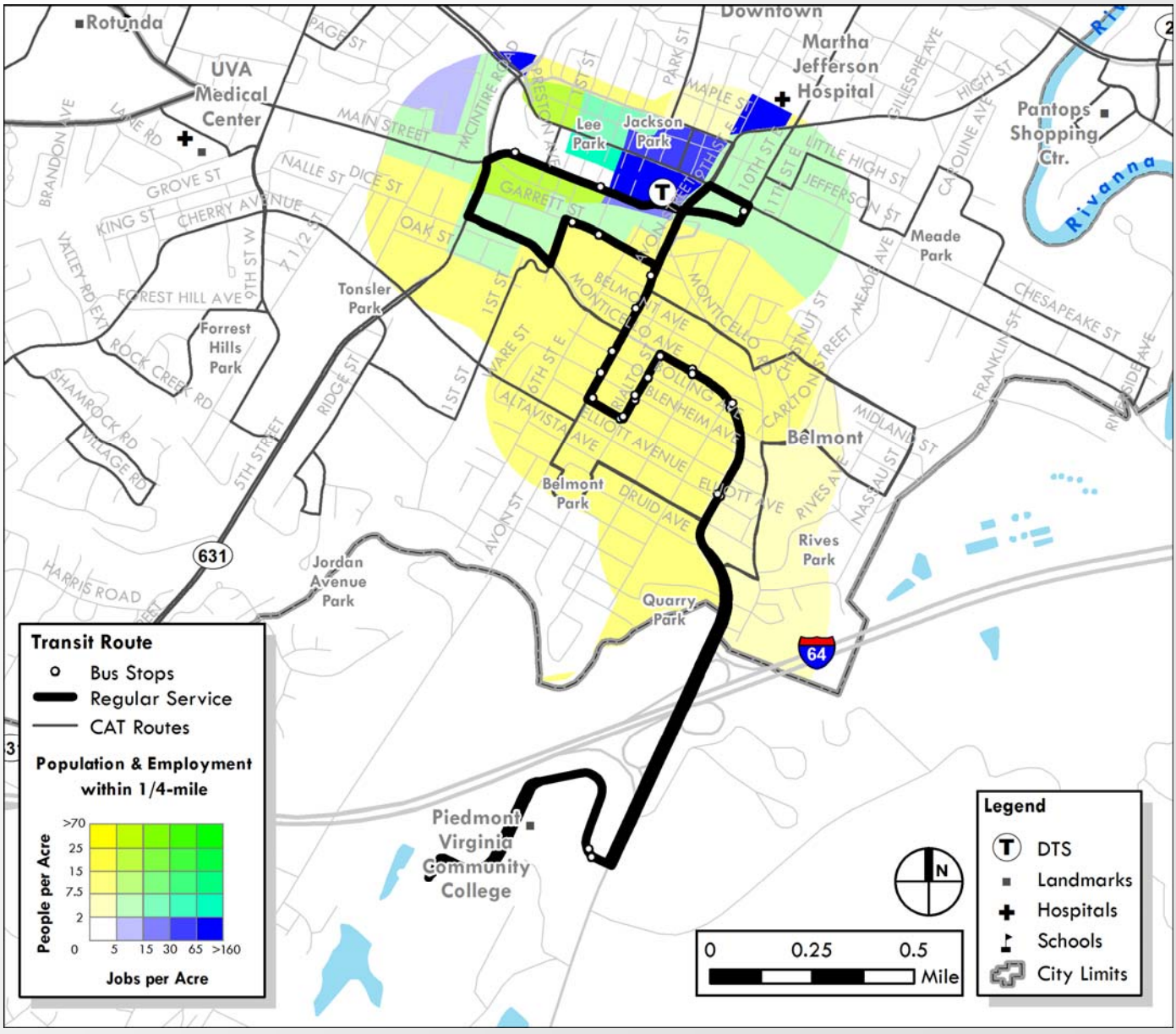


Charlottesville Area Transit – Route 1B – PVCC

Route 1B operates primarily as a linear route connecting downtown Charlottesville with Piedmont Virginia Community College (PVCC) via the Monticello Avenue corridor. Route 1B also provides circulation along the southern perimeter of the pedestrian mall and downtown's southern neighborhoods on its outbound trip via Water Street, Ridge Street, Monticello Avenue, 2nd Street and Garrett Street.

Of the 17 routes in the CAT system, Route 1B performs above-average on weekdays. However, performance is among the lowest quartile on Saturdays.

Route 1B	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 a.m. - 6:12 p.m.		6:45 a.m. - 6:12 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	12		12	
Daily Revenue-Hours	6		6	
Daily Revenue-Miles	90		90	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	154	(11)	25	(13)
Riders/Rev.-Hr. (Rank)	25.7	(4)	4.2	**(16)**
Riders/Rev.-Mi. (Rank)	1.7	(7)	0.3	**(16)**
Riders/Trip (Rank)	12.8	(8)	2.1	**(16)**



Description of Existing Alignment

Route 1B begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route zig-zags through south Charlottesville via 2nd Street, Garrett Street, Avon Street, Montrose Avenue and Rialto Street before continuing the southbound journey to PVCC. The college is accessed via College Avenue where the bus serves three stops before reaching the end-of-line. The return trip is operated in the reverse of the outbound trip until reaching Avon Street. At this point, Route 1B continues north to the DTS via Market Street, 10th Street and Water Street.

Route 1B primarily serves residential interests throughout the length of its route. Downtown is more commercially focused and the end-of-line at PVCC is educational. Major destinations along Route 1B include:

- Piedmont Housing Alliance
- ACAC Fitness & Wellness
- Friendship Court
- Piedmont House
- Piedmont Virginia Community College (PVCC)

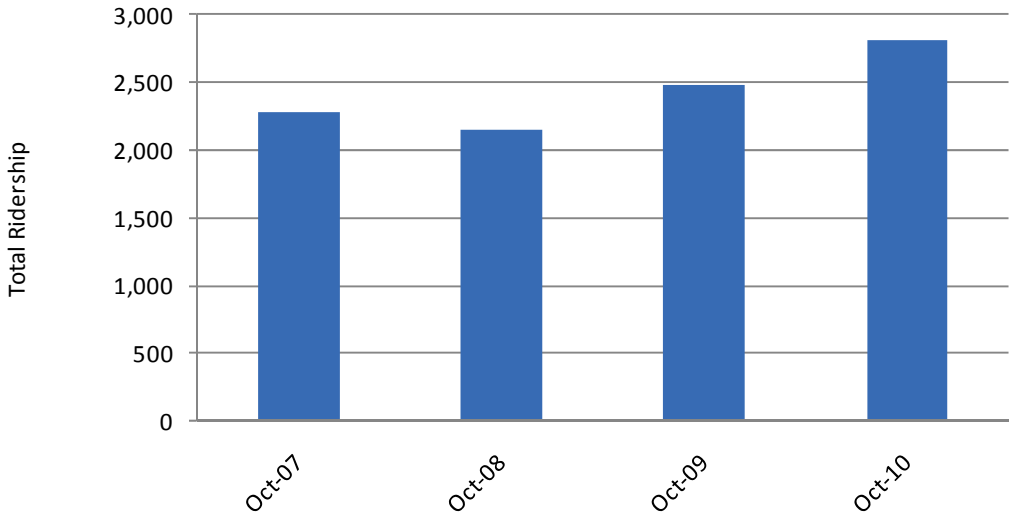
Key Route Issues and Observations

- *Alignment* – Route 1B is comprised of a one-way loop, attached to a linear alignment that primarily serves the Monticello Avenue corridor. The one-way-loop alignment is forced by the placement of the DTS and the need to circulate along the southern perimeter of the pedestrian mall to return east. The route also features a zig-zag movement along the north and south sides of Monticello Avenue, offering penetration 2-3 blocks into the neighborhoods. Once this movement is complete, the route is very direct to PVCC.
- *Stops* – Bus stops along Route 1B are inconsistently spaced but this may be more indicative of demand. Stops in the south Charlottesville neighborhoods are spaced the closest with some occurring once per block. Stops toward the outer end of the alignment are more sparse.
- *Schedule/Span of Service* – Route 1B operates Monday through Saturday from 6:45 a.m. until 6:12 p.m. (the last scheduled trip departs DTS at 5:45 p.m.) at 60-minute frequency. Sunday service is not offered. However, night service is provided along the same alignment by Route 23.
- *Cycle/Layover Times* – Route 1B has a 35-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 1A at the DTS. There are 19 minutes of scheduled running time with eight minutes of scheduled recovery time at PVCC and another eight minutes of scheduled recovery time at the DTS prior to the next departure as Route 1A.
- *Route Transfers* – Route 1B connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the neighborhoods south of downtown. Route 1B also intersects with Route 3 on Monticello Avenue.

Historical Ridership Characteristics

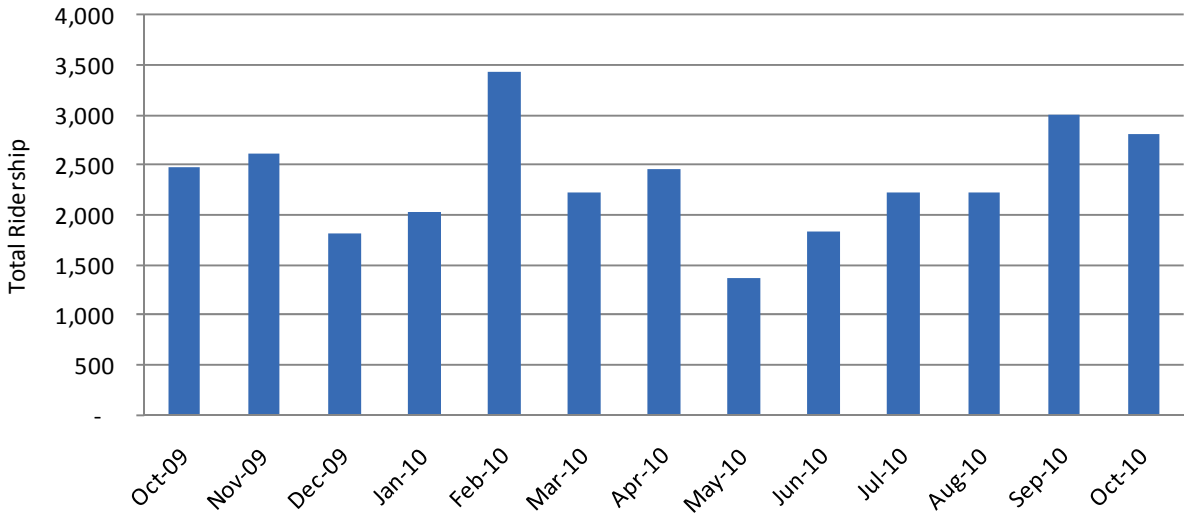
A year-by-year comparison of October ridership from 2007 through 2010 is presented in the figure below. It is important to note that prior to 2007, ridership for Routes 1A and 1B were recorded together. Thus, historical ridership for Route 1B is only available for 2007 and later. Since that time, ridership on Route 1B has shown modest increases over the past four years.

Year by Year October Ridership (2007 – 2010)



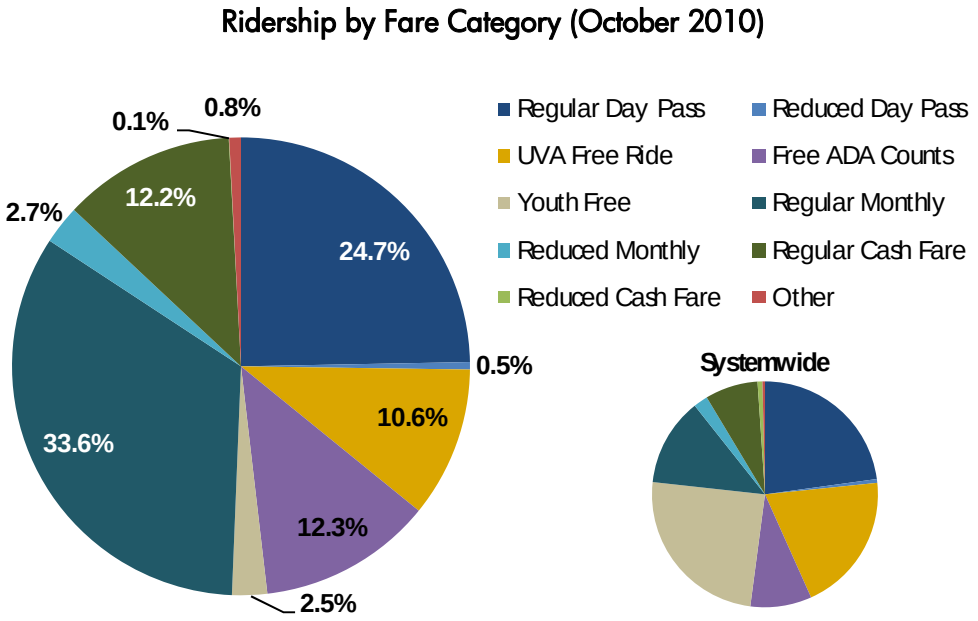
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Despite being the shortest month of the year, February appears to be Route 1B's strongest month. May appears to be the weakest month. Fall months followed by the spring months also perform well, suggesting PVCC's influence on ridership.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Monthly Passes generated the highest number of riders (33.6%). These pass-holders were much more prevalent than the systemwide average. Regular-Fare Day Passes represented the next largest group (24.7%). Free ADA riders and Regular Cash Fare riders were also well represented with both accounting for 12%.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 1B are as follows:

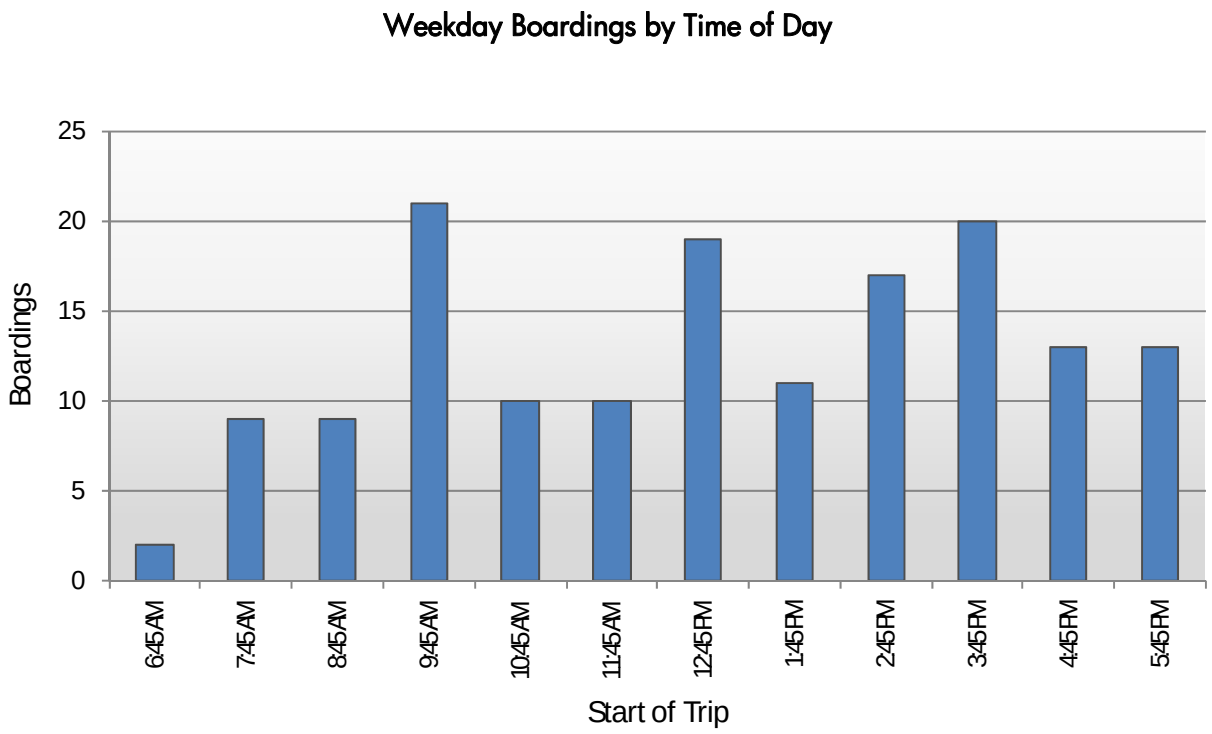
Route 1B Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
20	88	46	n/a	154	25	n/a
Maximum Load						
10	12	14	n/a	14	5	n/a
Timepoints Reached On Time						
83%	96%	92%	n/a	92%	69%	n/a

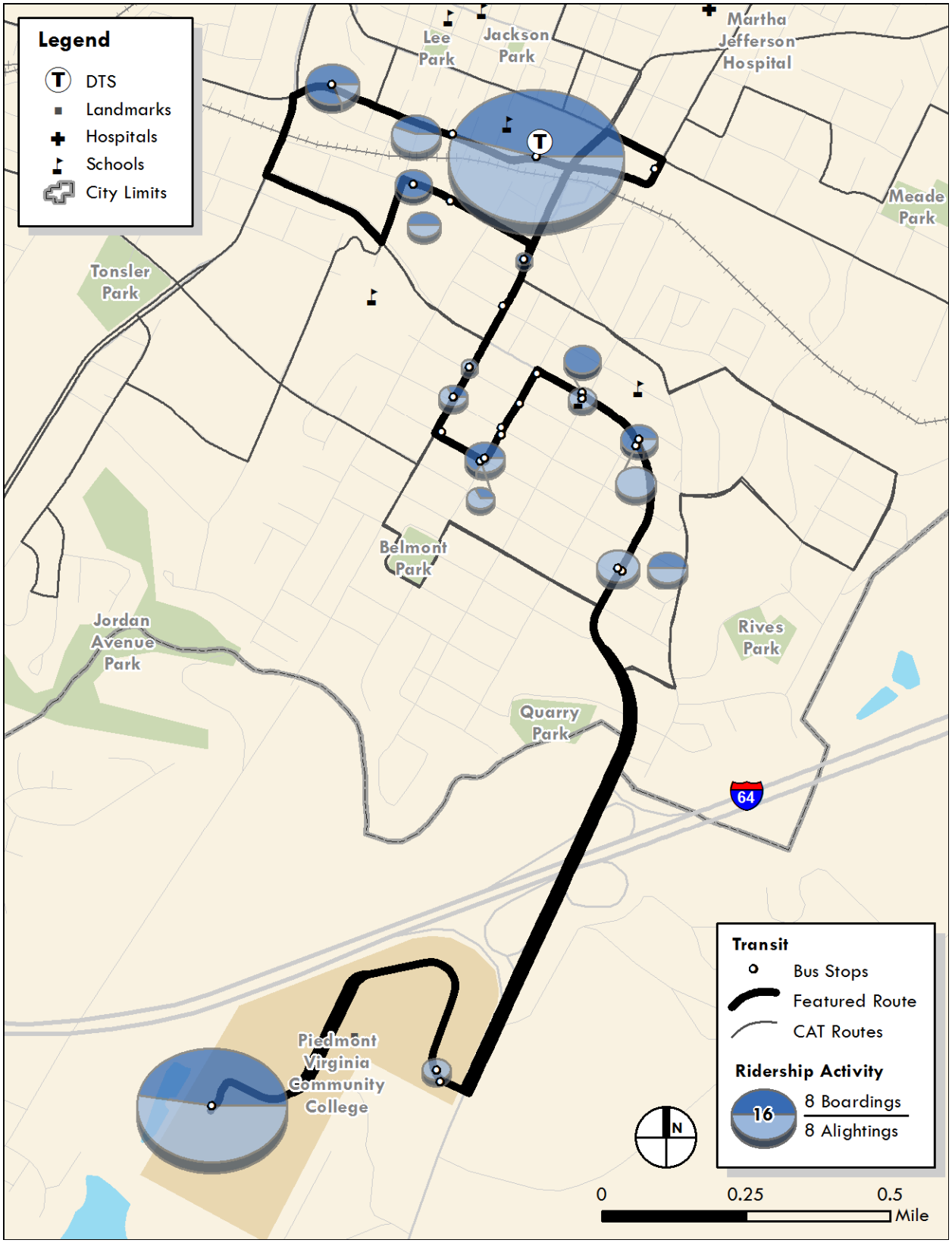
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

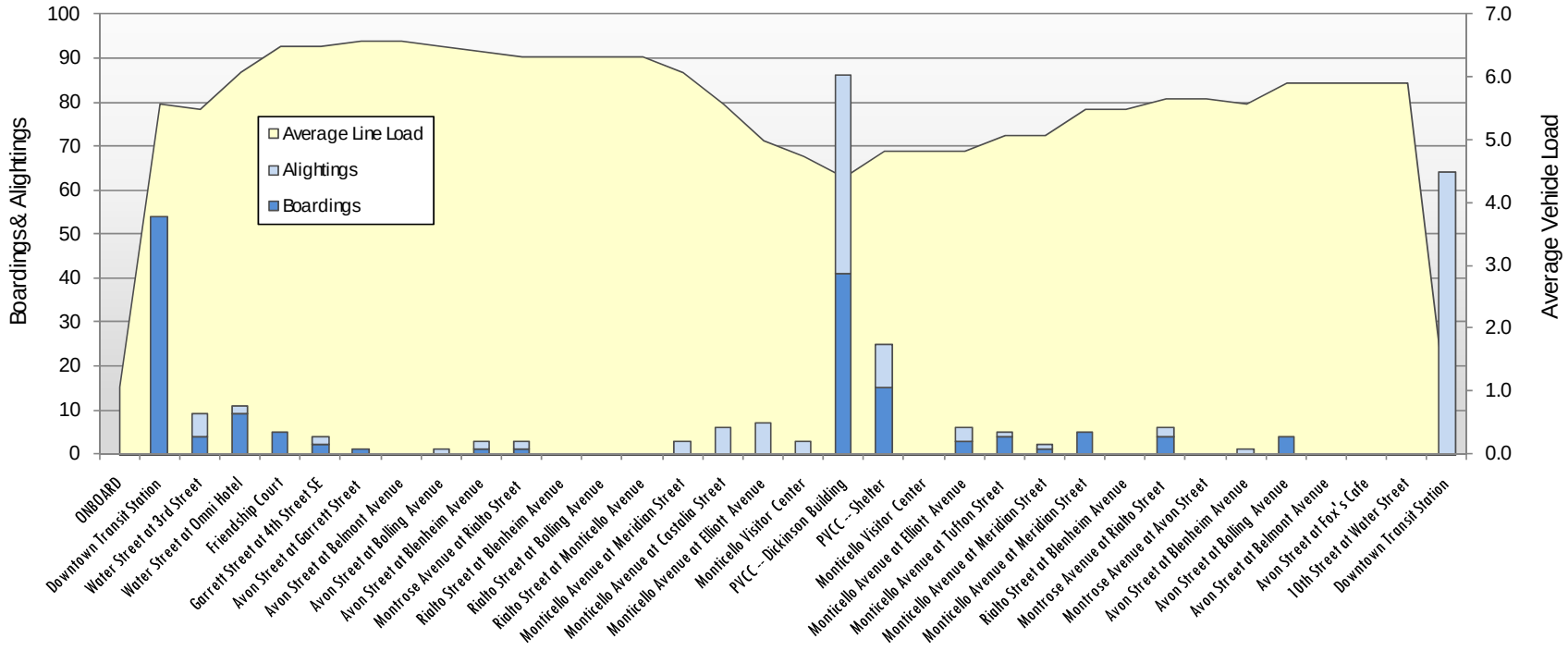
- Ridership on Route 1A is highest during the midday and early afternoon. The afternoon peak carries twice as many riders as the morning peak.
- The maximum observed load was 14 passengers and occurred during the afternoon peak period. The morning peak period had the lowest maximum loads.
- The 9:45 a.m. trip carried the most passengers followed by the 3:45 p.m. and 12:45 p.m. trips. The first trip of the morning at 6:45 p.m. recorded the fewest passengers.
- The DTS is the highest volume stop on Route 1B. The stops at PVCC were overwhelmingly the next heavily utilized. Stops along Avon Street and Rialto Street saw relatively few boardings or alightings.
- On-time performance was met 92% of the time throughout the day. On-time performance during the morning periods was the poorest while midday performance was the best. Trips leaving the DTS in the morning periods tended to leave 1-2 minutes early. However, the schedule recovered by the time the bus returned to the DTS. Afternoon trips also had a tendency to leave early but ran 1-3 minutes late by the time they reached the inbound timepoint at Montrose Avenue and Avon Street.


Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:45AM
7:45AM
8:45AM
9:45AM
10:45AM
11:45AM
12:45PM
1:45PM
2:45PM
3:45PM
4:45PM
5:45PM
Start of Trip

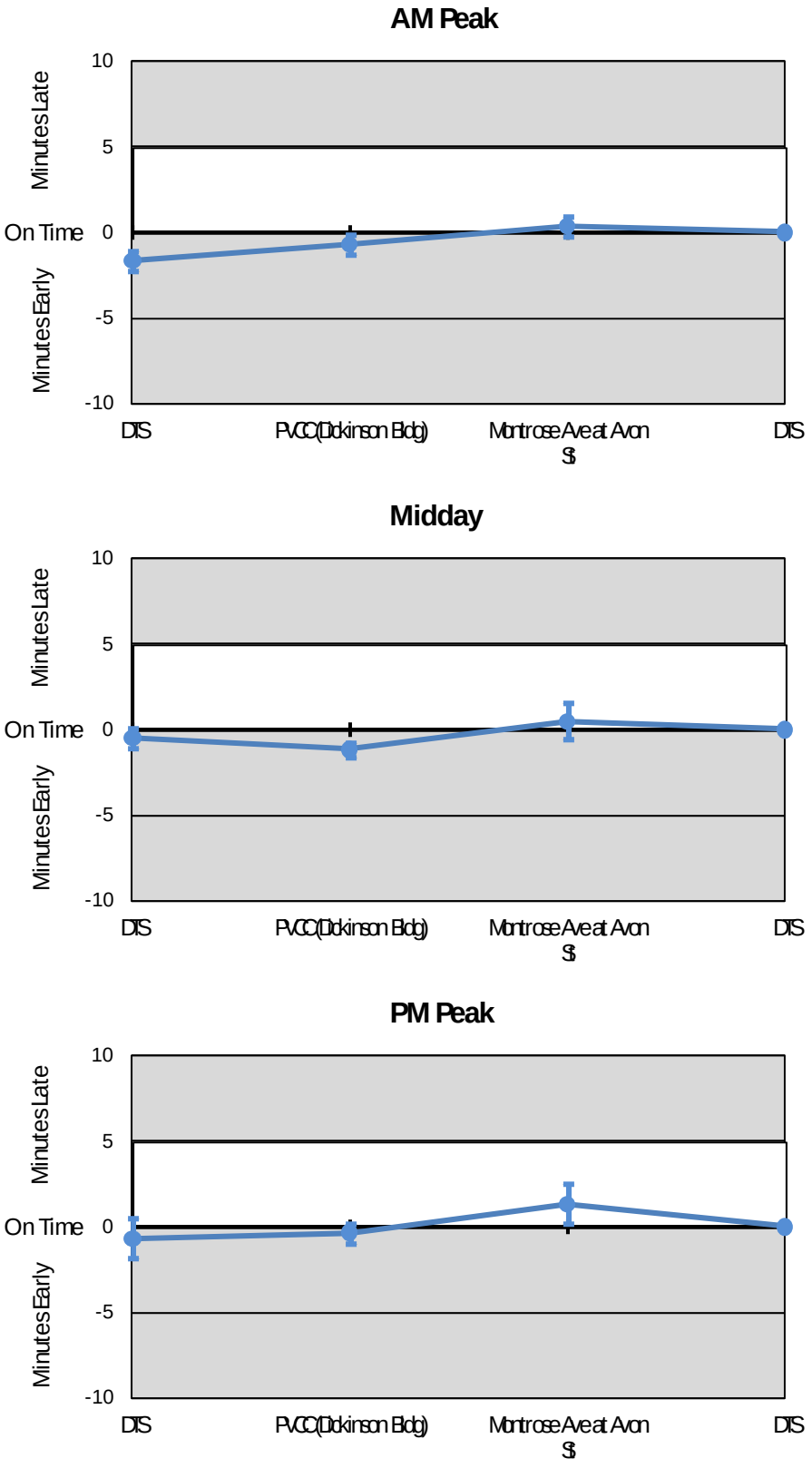
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads

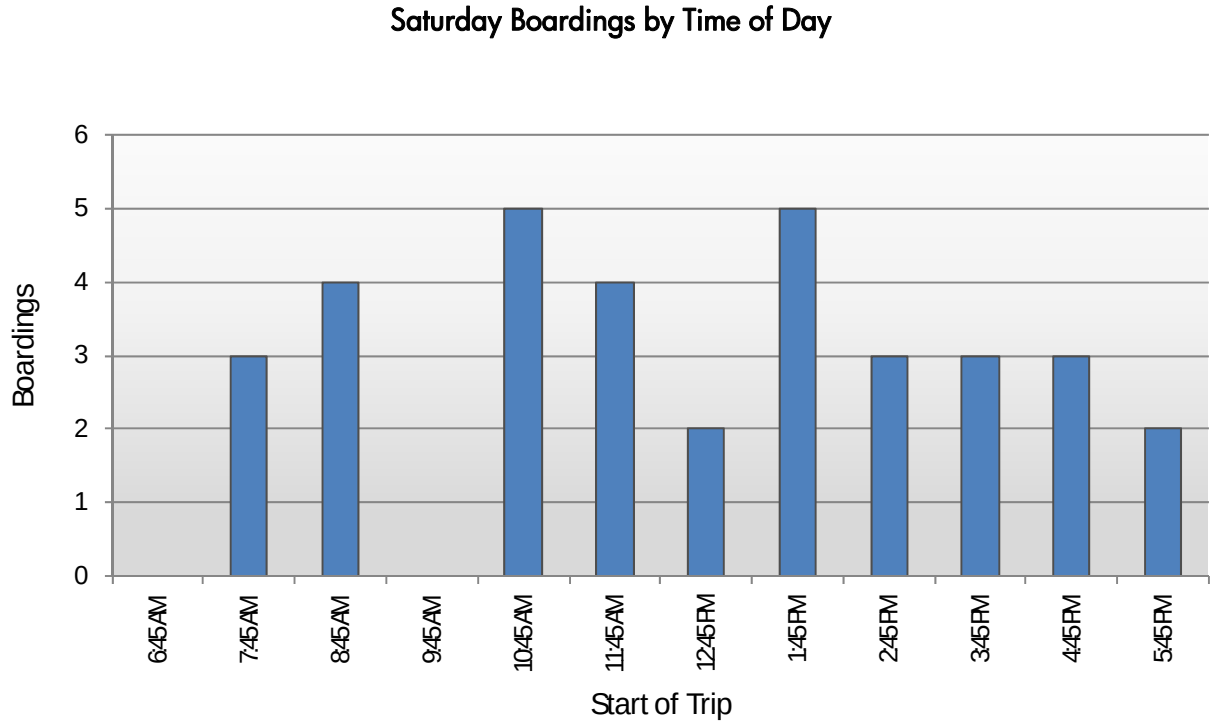


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trips of the day were at 10:45 a.m. and 1:45 p.m. with five passengers each. The 6:45 a.m. and 9:45 a.m. trips reported no riders.
- Saturday trips carry only 16% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was five.
- Saturday trips were on-time 69% of the time. Trips throughout the day tend to run early, likely due to the low ridership levels when compared to weekdays.

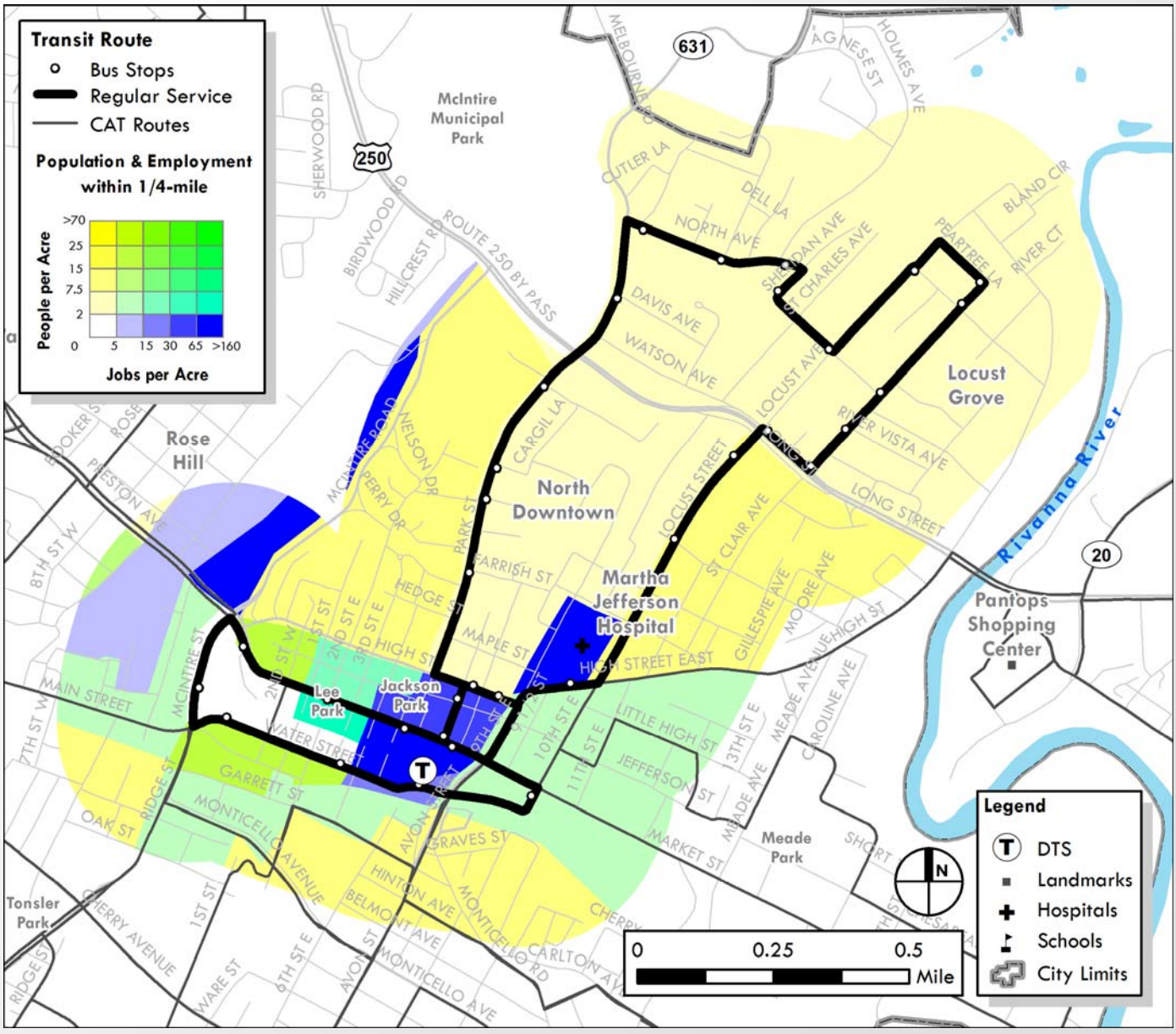


Charlottesville Area Transit – Route 2A – Locust Avenue

Route 2A operates as one-direction circulator route serving North Downtown and the Locust Grove neighborhood. The route is also one of three that serves Martha Jefferson Hospital. As with most of CAT's downtown routes, Route 2A provides circulation along the perimeter of the pedestrian mall on its outbound trip via Water Street, McIntyre Street and Market Street.

Of the 17 routes in the CAT system, Route 2A performs in the lowest quartile on weekdays and is below average on Saturdays.

Route 2A	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:20 a.m. - 6:42 p.m.		6:20 a.m. - 6:42 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	8		8	
Route Statistics				
Round Trips	13		13	
Daily Revenue-Hours	6.5		6.5	
Daily Revenue-Miles	68.9		68.9	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	68	(14)	43	(12)
Riders/Rev.-Hr. (Rank)	10.5	(14)	6.6	(13)
Riders/Rev.-Mi. (Rank)	1.0	(14)	0.6	(13)
Riders/Trip (Rank)	5.2	(14)	3.3	(13)



Description of Existing Alignment

Route 2A begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge McIntyre Road, north to Preston Avenue and then east on Market Street. At 8th Street, the route turns north to High Street and then west to begin the trip north on Park Street. The route then turns east on North Avenue, south on Sheridan Avenue, east on Calhoun Street and north on Locust Street. At Peartree Lane, Route 2A begins its trip back into town via St. Clair Avenue, Long Street and Locust Avenue. After serving Martha Jefferson Hospital at High Street, the route heads to DTS via 7th Street, Market Street, 10th Street and Water Street.

Route 2A serves residential interests on its northernmost end with more commercial interests closer into town and near the hospital. Major destinations along Route 2A include:

- Federal Courthouse
- Charlottesville City Hall
- Albemarle County Courthouse
- Martha Jefferson Hospital

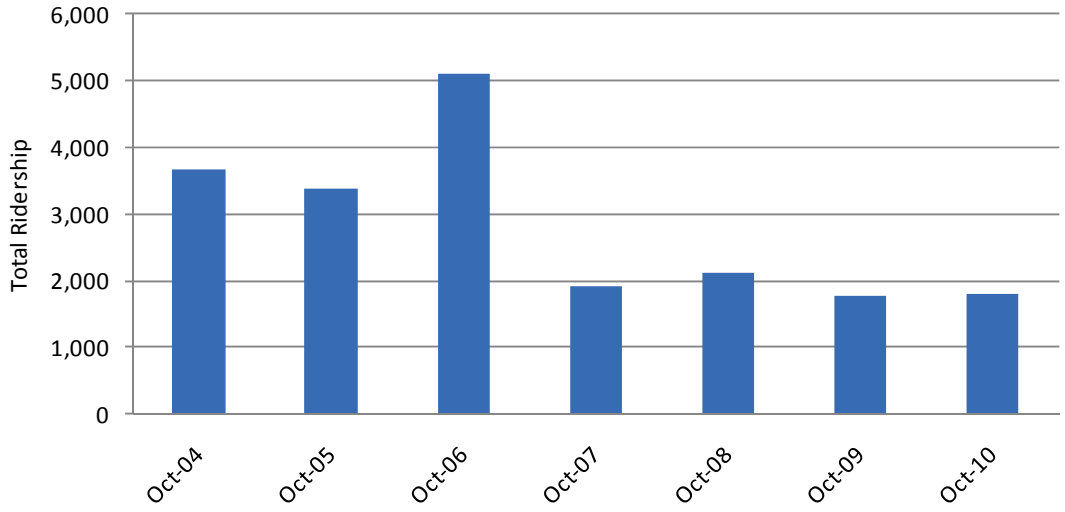
Key Route Issues and Observations

- *Alignment* – Route 2A is comprised of two one-way loops, configured in a "figure-eight" alignment. Part of this alignment is forced by the placement of the DTS and the need to circulate around the perimeter of the pedestrian mall to return north. The larger loop along the northern portion of the alignment is fairly direct as it travels Park Street. However, the return routing is circuitous as it meanders through the Locust Grove community. Travel speeds along these segments may be challenging as drivers must navigate speed humps and narrow roadways associated with these older established neighborhoods.
- *Stops* – Bus stops along Route 2A appear to be adequately spaced every two to three blocks through most of the route's alignment. There were a couple of instances on Park Street and St. Clair Avenue where stops may be too closely spaced.
- *Schedule/Span of Service* – Route 2A operates Monday through Saturday from 6:20 a.m. until 6:42 p.m. (the last scheduled trip departs DTS at 6:20 p.m.) at 60-minute frequency. Night service and Sunday service are not offered.
- *Cycle/Layover Times* – Route 2A has a 25-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 2B at the DTS. There are 22 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure as Route 2B.
- *Route Transfers* – Route 2A connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the downtown pedestrian mall. Route 2A also intersects with Routes 1A and 10 near Martha Jefferson Hospital.

Historical Ridership Characteristics

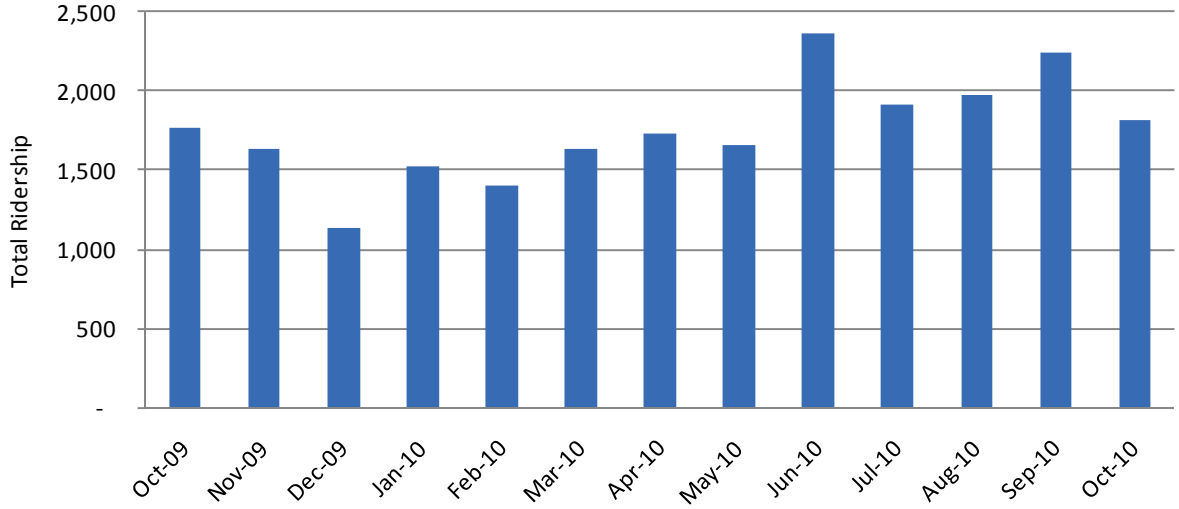
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. It is important to note that starting in 2007, ridership for Routes 2A and 2B were recorded separately. Thus, ridership from prior to 2007 reflects higher than the more recent years since it also includes Route 2B. Since then, ridership has been relatively stable.

Year by Year October Ridership (2004 – 2010)



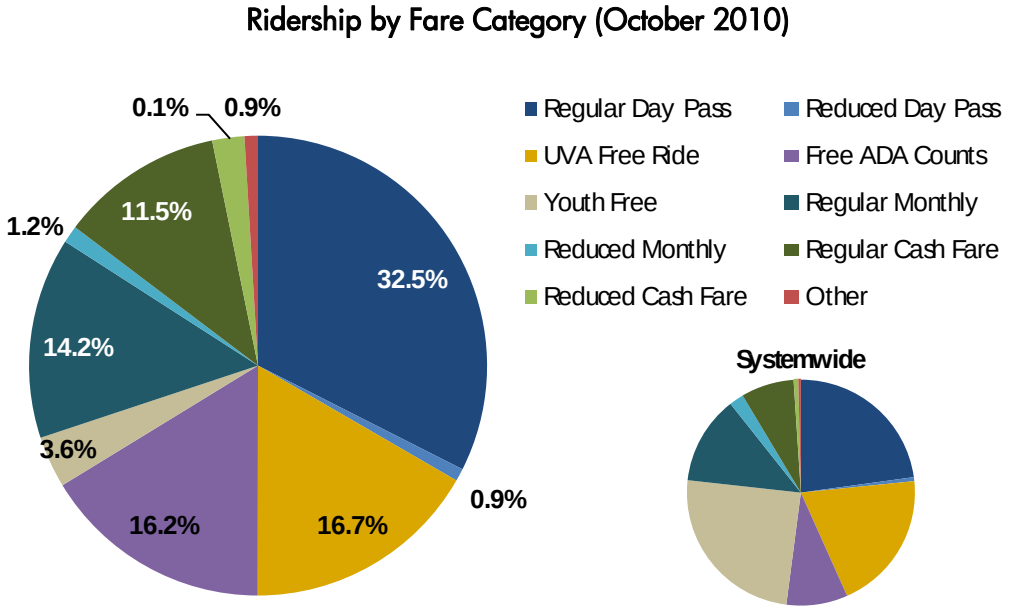
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. June and September were relatively strong months in comparison with the rest of the year. December was the weakest of the review period. All other months maintain relatively constant ridership levels.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Pass riders accounted for the most boardings with nearly one-third of all riders; considerably higher than reported systemwide. The next highest category was UVA riders (16.7%) followed by Free ADA riders (16.2%) and Regular-Fare Monthly Pass riders (14.2%). Only 11.5% of all route riders paid the adult cash fare, slightly higher than what was observed systemwide. Youth ridership was considerably lower than systemwide.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 2A are as follows:

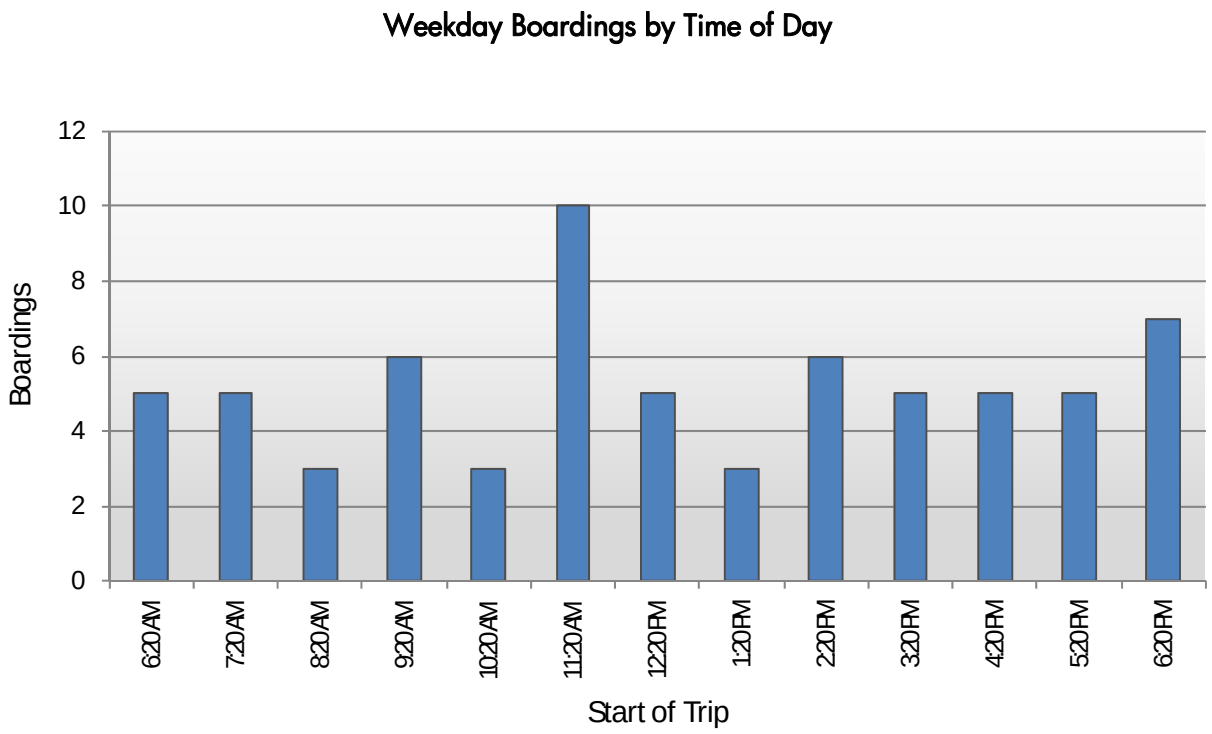
Route 2A Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
13	33	22	n/a	68	43	n/a
Maximum Load						
5	9	7	n/a	9	8	n/a
Timepoints Reached On Time						
67%	94%	92%	n/a	87%	87%	n/a

On time defined as between 1 minute early and 5 minutes late

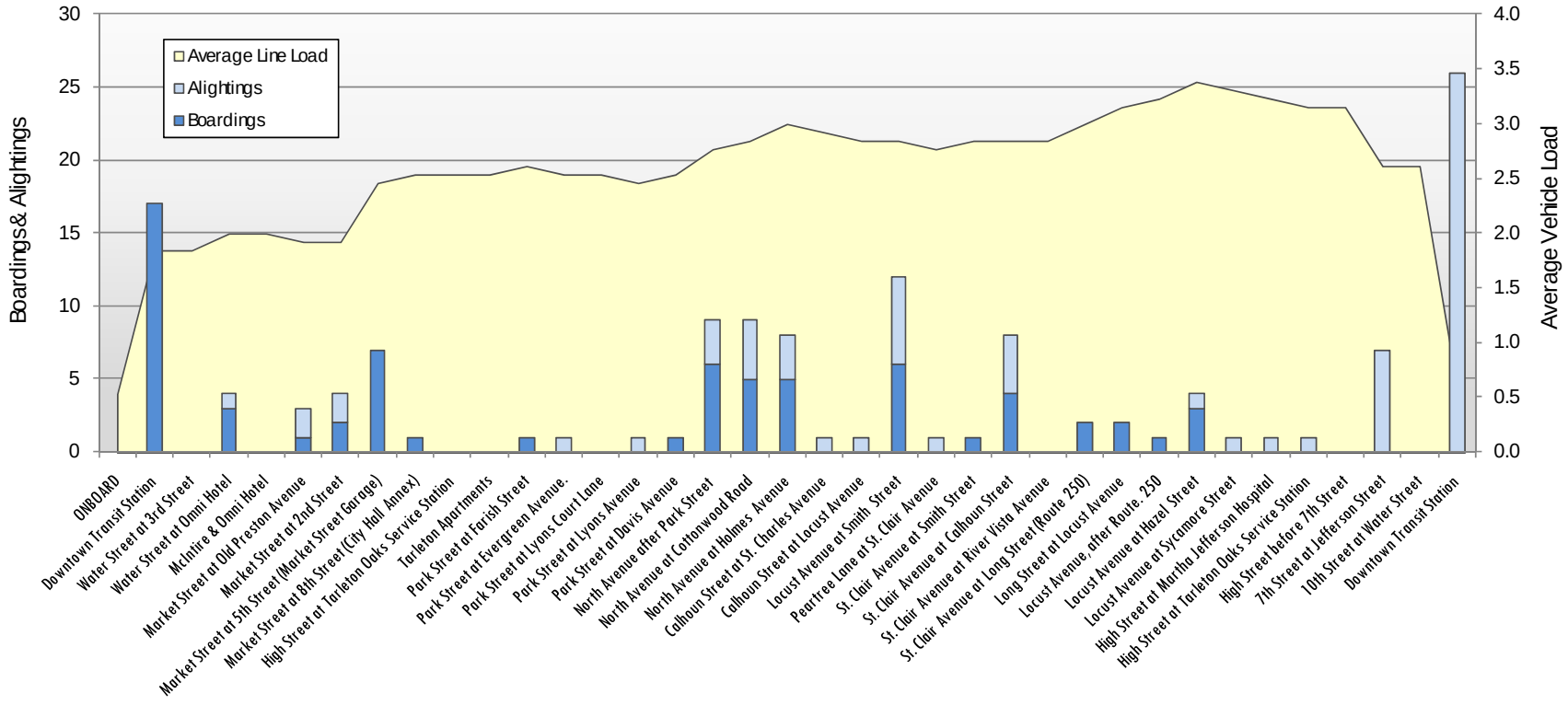
Weekday Observations

- Ridership on Route 2A is highest during the midday followed by the afternoon peak.
- The maximum observed load was nine passengers and occurred during the midday period. The morning peak period had the lowest maximum loads with the highest recording only five riders.
- The 11:20 a.m. trip carried the most passengers followed by the 6:20 p.m. trip. The 8:20 a.m., 10:20 a.m. and 1:20 p.m. trips recorded the fewest passengers.
- The DTS is the highest volume stop on Route 2A. The next strongest stops were along North Avenue as well as the stops at Locust Avenue & Smith Street and St. Clair Avenue & Calhoun Street. Stops along Park Street saw relatively few boardings or alightings.
- On-time performance was met 87% of the time throughout the day. On-time performance during the midday and afternoons fared better than the mornings.

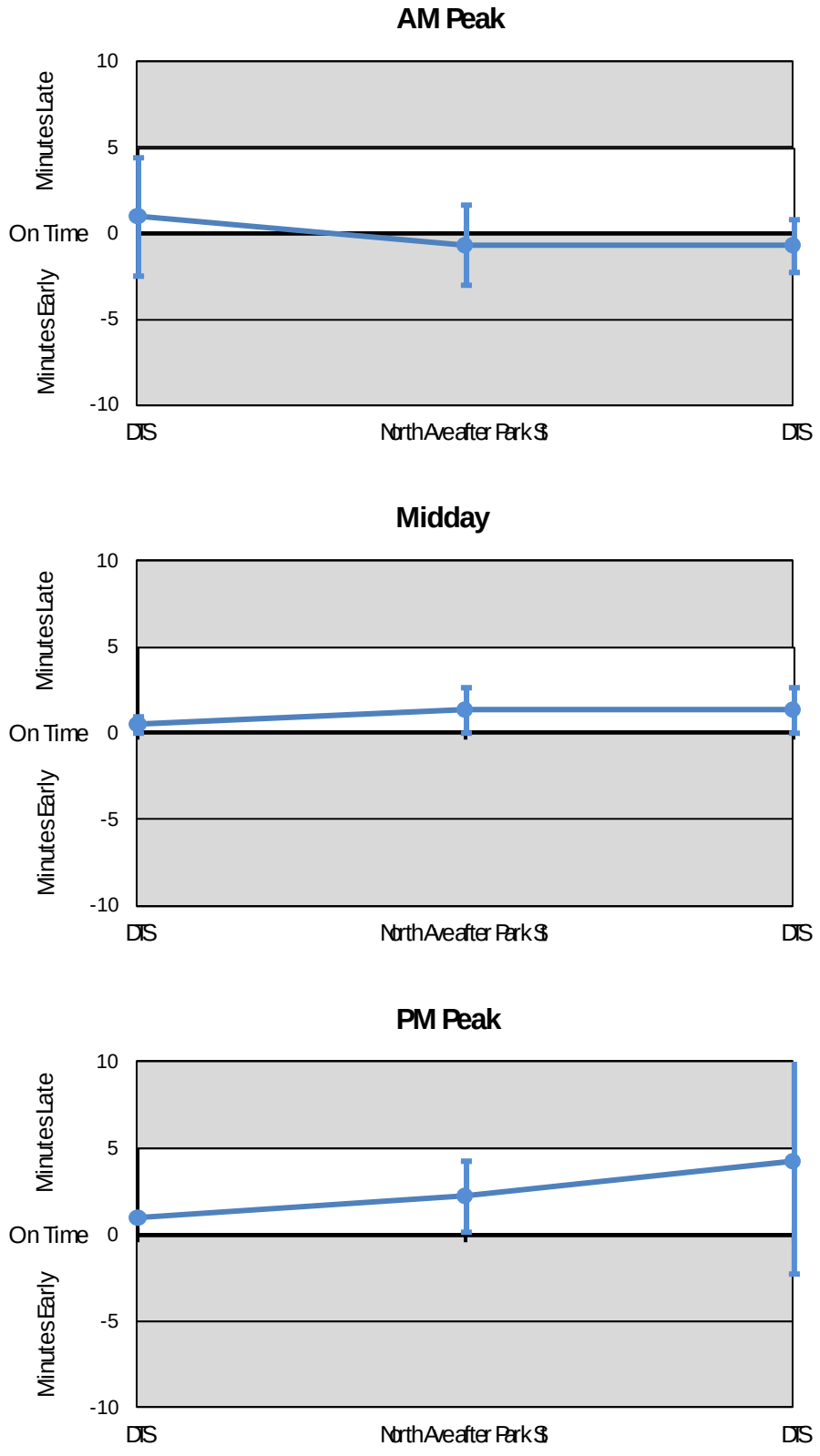

Weekday Boardings by Time of Day
Boardings
12
10
8
6
4
2
0
6:20 AM
7:20 AM
8:20 AM
9:20 AM
10:20 AM
11:20 AM
12:20 PM
1:20 PM
2:20 PM
3:20 PM
4:20 PM
5:20 PM
6:20 PM
Start of Trip

Weekday Ridership Activity

Weekday Ridership by Stop and Average Line Loads

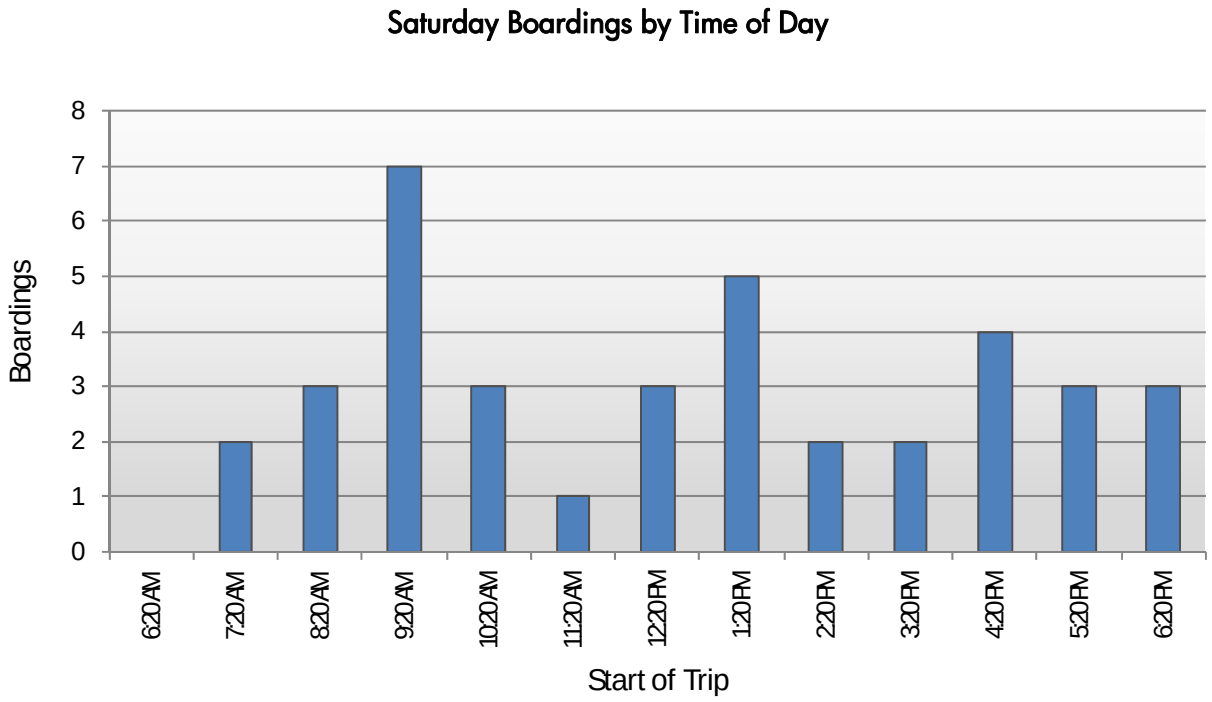


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the day was at 9:20 a.m. followed by the 1:20 and 4:20 p.m. trips. The remaining trips typically carried 2-3 passengers.
- Saturday trips carry about 63% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was eight.
- Saturday trips were on-time 87% of the time.

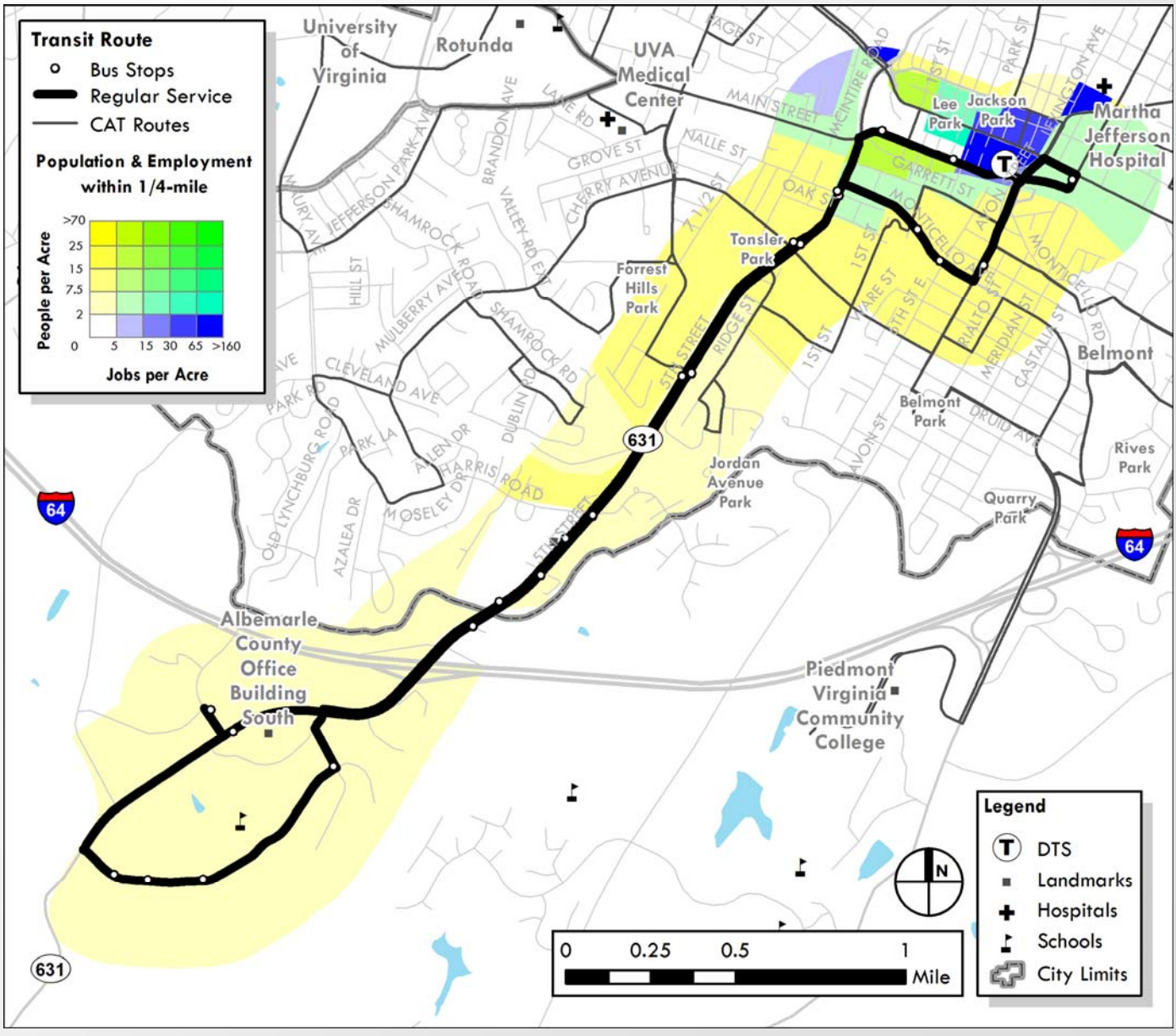


Charlottesville Area Transit – Route 2B – Southwood

Route 2B operates primarily as a linear route connecting downtown Charlottesville with the Albemarle County Office Building South via the 5th Street corridor. Route 2B also provides circulation along the southern perimeter of the pedestrian mall and downtown's southern neighborhoods on its outbound trip via Water Street and Ridge Street and on its inbound trip via Monticello Avenue and Avon Street. Half of Route 2B's operating costs are funded by Albemarle County.

Of the 17 routes in the CAT system, Route 2B performs above-average on weekdays and on Saturdays.

Route 2B	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 a.m. - 6:15 p.m.		6:45 a.m. - 6:15 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	0		0	
Route Statistics				
Round Trips	12		12	
Daily Revenue-Hours	6		6	
Daily Revenue-Miles	98.4		98.4	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	169	(9)	105	(8)
Riders/Rev.-Hr. (Rank)	28.2	(3)	17.5	(5)
Riders/Rev.-Mi. (Rank)	1.7	(6)	1.1	(8)
Riders/Trip (Rank)	14.1	(6)	8.8	(8)



Description of Existing Alignment

Route 2B begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south onto 5th Street. At Stagecoach Road, the route turns left onto Oak Hill Circle and then right onto Hickory Street, returning to 5th Street. The route deviates to the Region Ten office via Old Lynchburg Road before returning to 5th Street to serve the Albemarle County Office Building South. The inbound trip to DTS resumes via 5th Street, Monticello Avenue, Avon Street, Market Street, 10th Street and Water Street.

Route 2B primarily serves a mix of residential and commercial interests throughout the length of its route. Major destinations along Route 2B include:

- Willoughby Square
- Southwood Mobile Home Park
- Region Ten
- Albemarle County Office Building South
- Piedmont Housing Alliance
- ACAC Fitness & Wellness

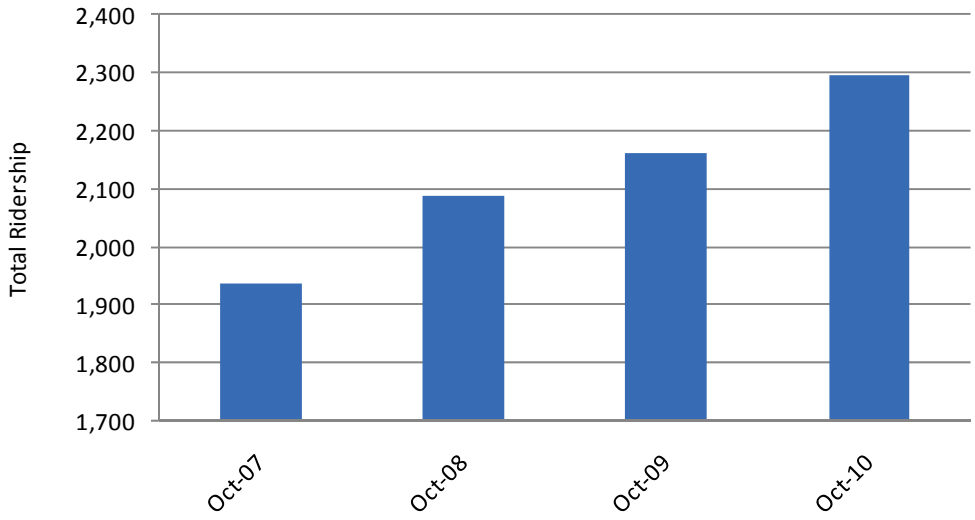
Key Route Issues and Observations

- *Alignment* – Route 1B is primarily a direct, corridor-oriented route along Ridge and 5th Streets. A one-way loop is featured at both termini. The downtown loop is a function of the DTS' placement. The Hickory Street loop provides a means to turn the bus around for the inbound trip. A difficult left turn from Old Lynchburg Highway onto 5th Street was also noted.
- *Stops* – Bus stops along Route 2B are inconsistently spaced but this may be more indicative of demand. Stops along 5th Street were less dense, likely as not to interfere with the flow of vehicular traffic along this busy corridor.
- *Schedule/Span of Service* – Route 2B operates Monday through Saturday from 6:45 a.m. until 6:15 p.m. (the last scheduled trip departs DTS at 5:45 p.m.) at 60-minute frequency. Sunday service is not offered. However, night service is provided along some of the Ridge Street alignment by Route 22.
- *Cycle/Layover Times* – Route 2B has a 35-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 2A at the DTS. There are 30 minutes of scheduled running time with five minutes of scheduled recovery time at the DTS prior to the next departure as Route 2A.
- *Route Transfers* – Route 2B connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the neighborhoods south of downtown. Route 2B also intersects with Route 4 on 5th Street.

Historical Ridership Characteristics

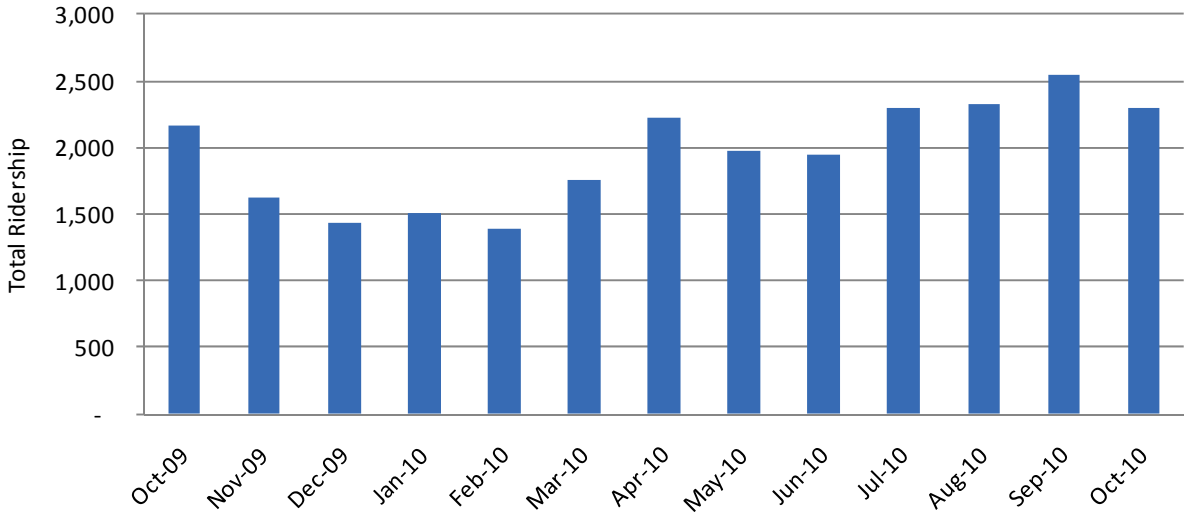
A year-by-year comparison of October ridership from 2007 through 2010 is presented in the figure below. It is important to note that prior to 2007, ridership for Routes 2A and 2B were recorded together. Thus, historical ridership for Route 2B is only available for 2007 and later. Regardless, ridership on Route 2B has shown significant increases over the past four years.

Year by Year October Ridership (2007 – 2010)



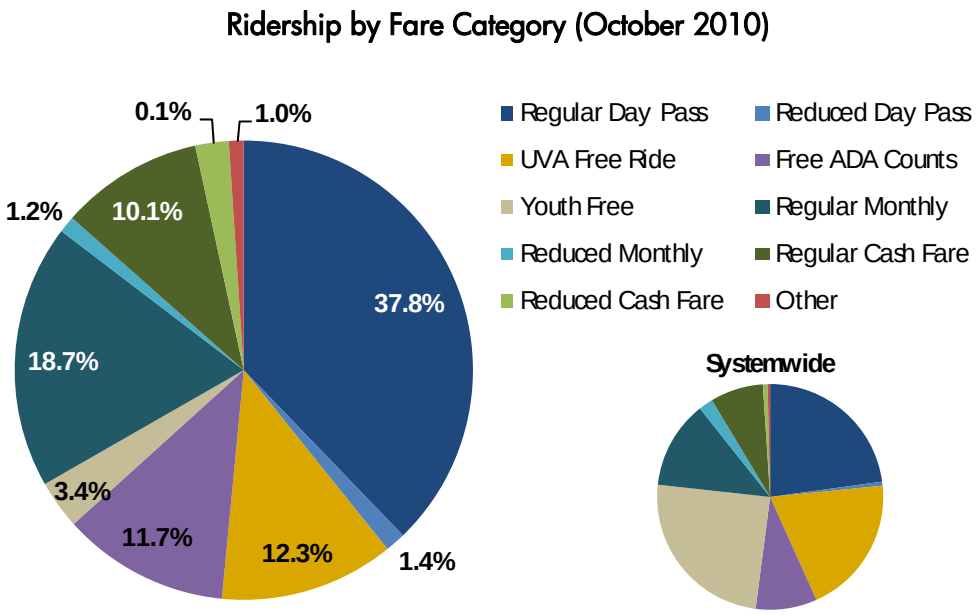
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Warmer weather months tend to carry the highest number of riders. The lowest ridership was recorded in December, January and February.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Passes generated the highest number of riders (37.8%). These riders were much more prevalent than the systemwide average. Regular-Fare Monthly Passes represented the next largest group (18.7%). UVA riders and Free ADA riders were also well represented with both accounting for 12%. Regular cash fares accounted for just over 10% of all rides.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 2B are as follows:

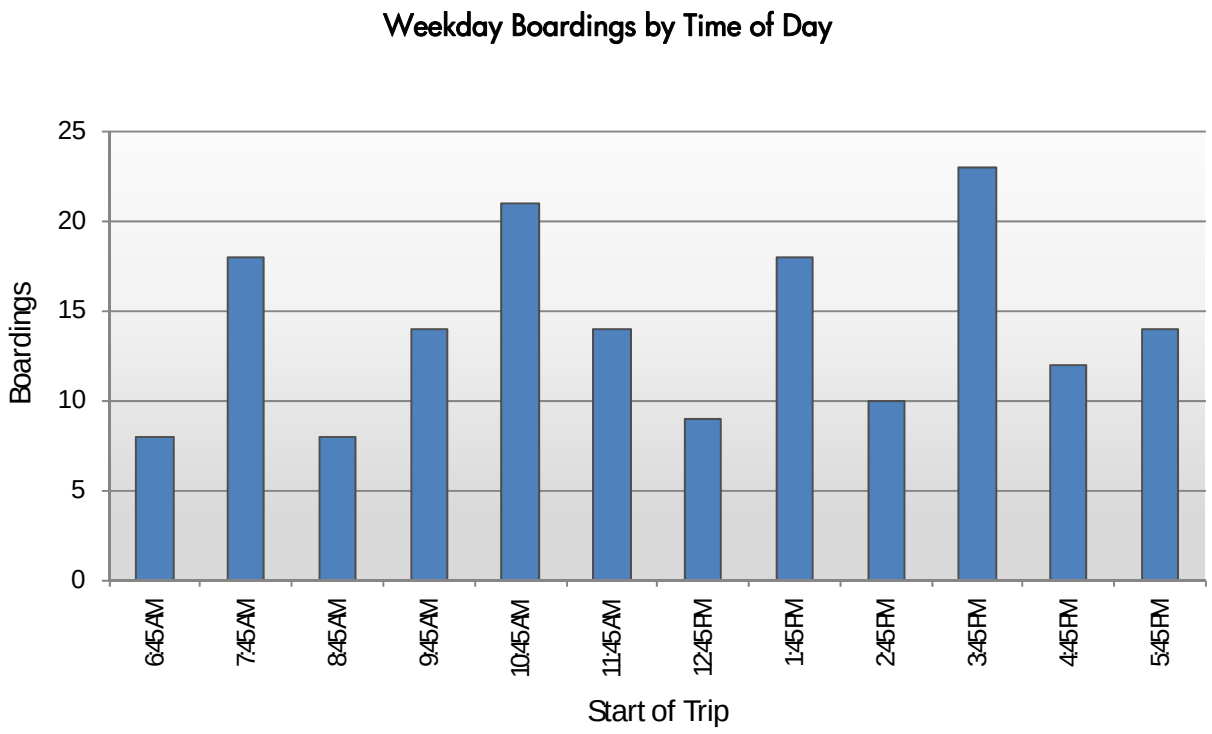
Route 2B Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
34	86	49	n/a	169	105	n/a
Maximum Load						
19	13	11	n/a	19	18	n/a
Timepoints Reached On Time						
87%	93%	100%	n/a	93%	73%	n/a

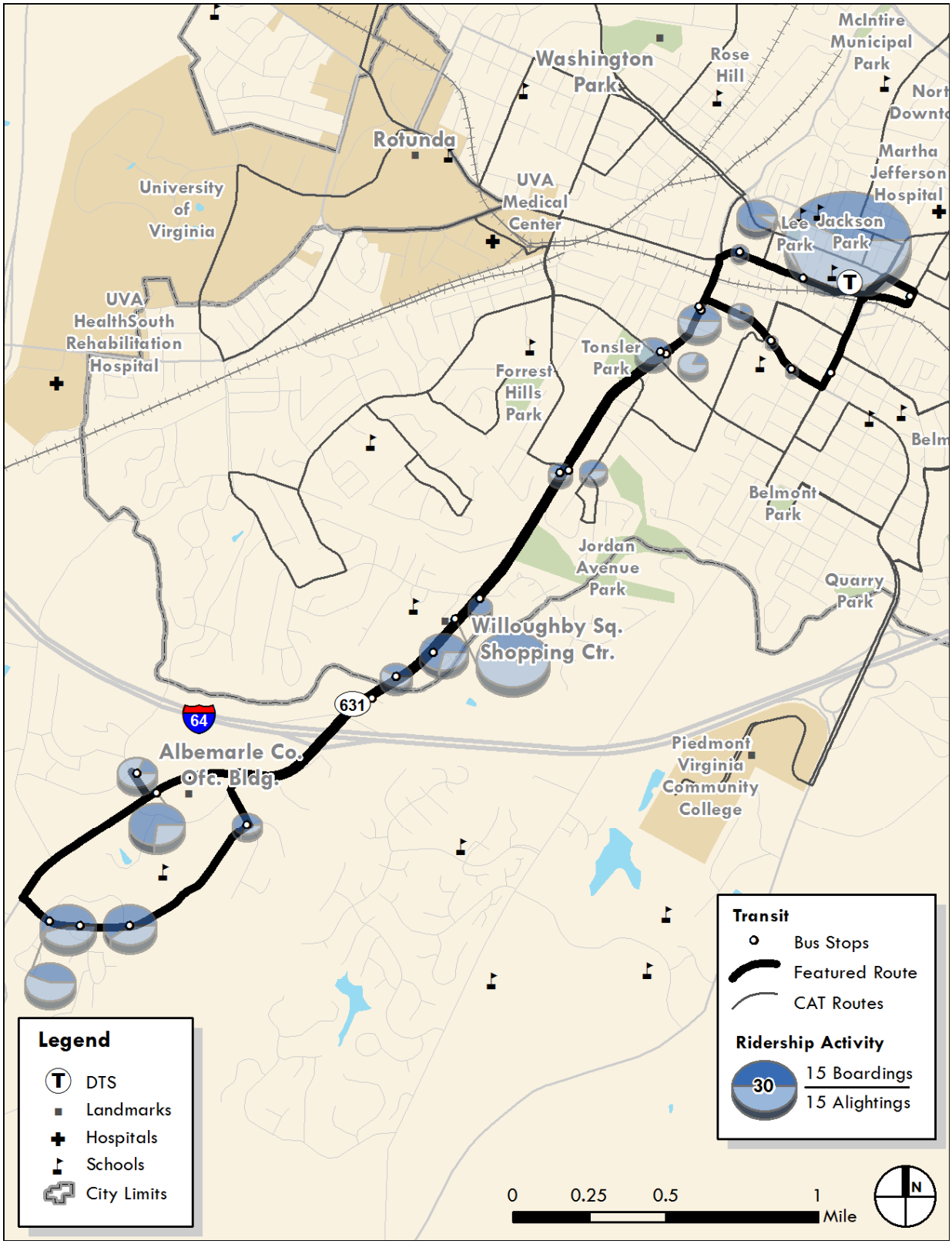
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

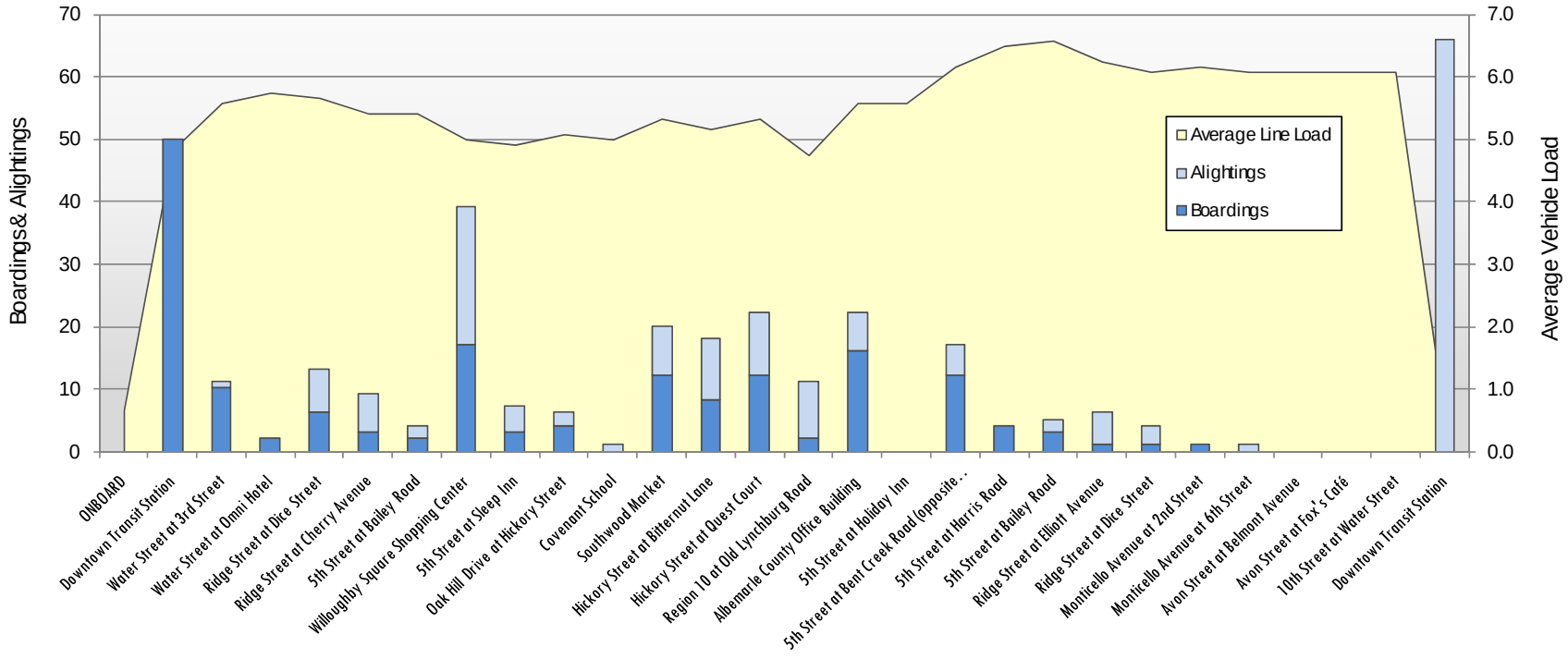
- Ridership on Route 2A is highest during the midday. The afternoon peak carries slightly more riders than the morning peak.
- The maximum observed load was 19 passengers and occurred during the morning peak period. The afternoon peak period had the lowest maximum loads.
- The 3:45 p.m. trip carried the most passengers followed by the 10:45 a.m. trip. The 6:45 a.m. (first trip of the morning) and the 8:45 a.m. trips recorded the fewest passengers.
- The DTS is the highest volume stop on Route 2B. The stops at Willoughby Shopping Center were the next most utilized. Stops along Monticello Avenue and Avon Street saw relatively few boardings or alightings.
- On-time performance was met 93% of the time throughout the day. On-time performance during the morning periods was the poorest while midday performance was the best. Trips were rarely early and were only five minutes late as worst.

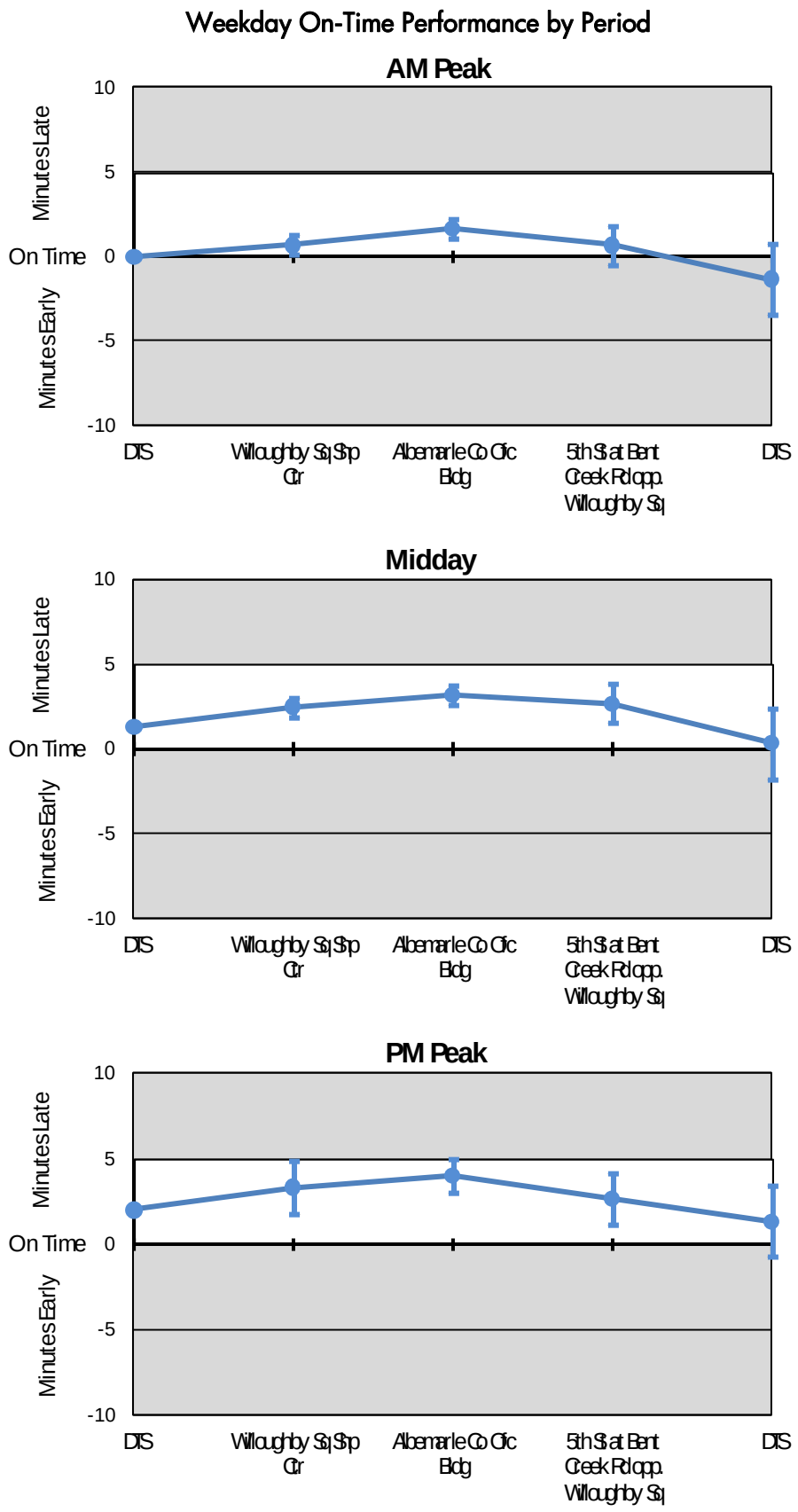

Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:45AM
7:45AM
8:45AM
9:45AM
10:45AM
11:45AM
12:45PM
1:45PM
2:45PM
3:45PM
4:45PM
5:45PM
Start of Trip

Weekday Ridership Activity



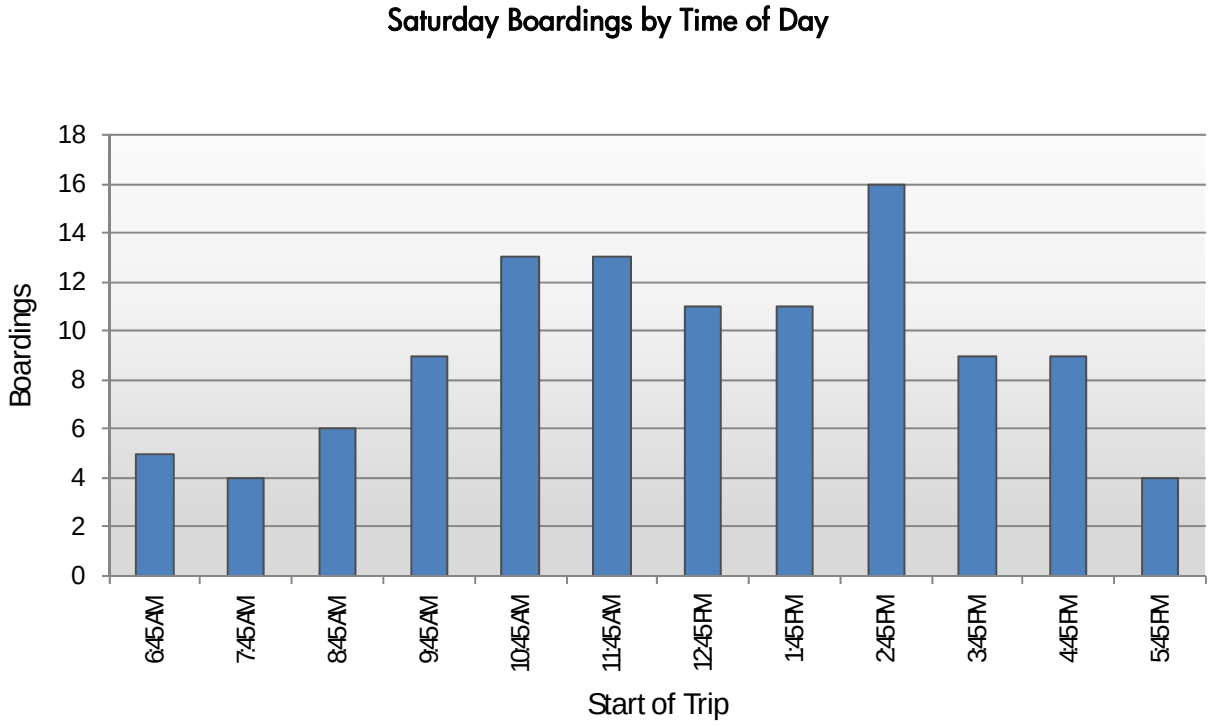
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
Willoughby Sq Shp Ctr
Albemarle Co Ofc Bldg
5th St at Bent Creek Rd opp. Willoughby Sq
DTS
Midday
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
Willoughby Sq Shp Ctr
Albemarle Co Ofc Bldg
5th St at Bent Creek Rd opp. Willoughby Sq
DTS
PM Peak
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
Willoughby Sq Shp Ctr
Albemarle Co Ofc Bldg
5th St at Bent Creek Rd opp. Willoughby Sq
DTS

Saturday Observations

- The busiest trips of the day were at 2:45 p.m. followed by 10:45 and 11:45 a.m. The 7:45 a.m. and 5:45 p.m. (last trip of the day) recorded the lowest number of riders with four each.
- Saturday trips carry 62% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 18.
- Saturday trips were on-time 73% of the time. Morning trips tend to run early while midday and afternoon trips tend to operate late.

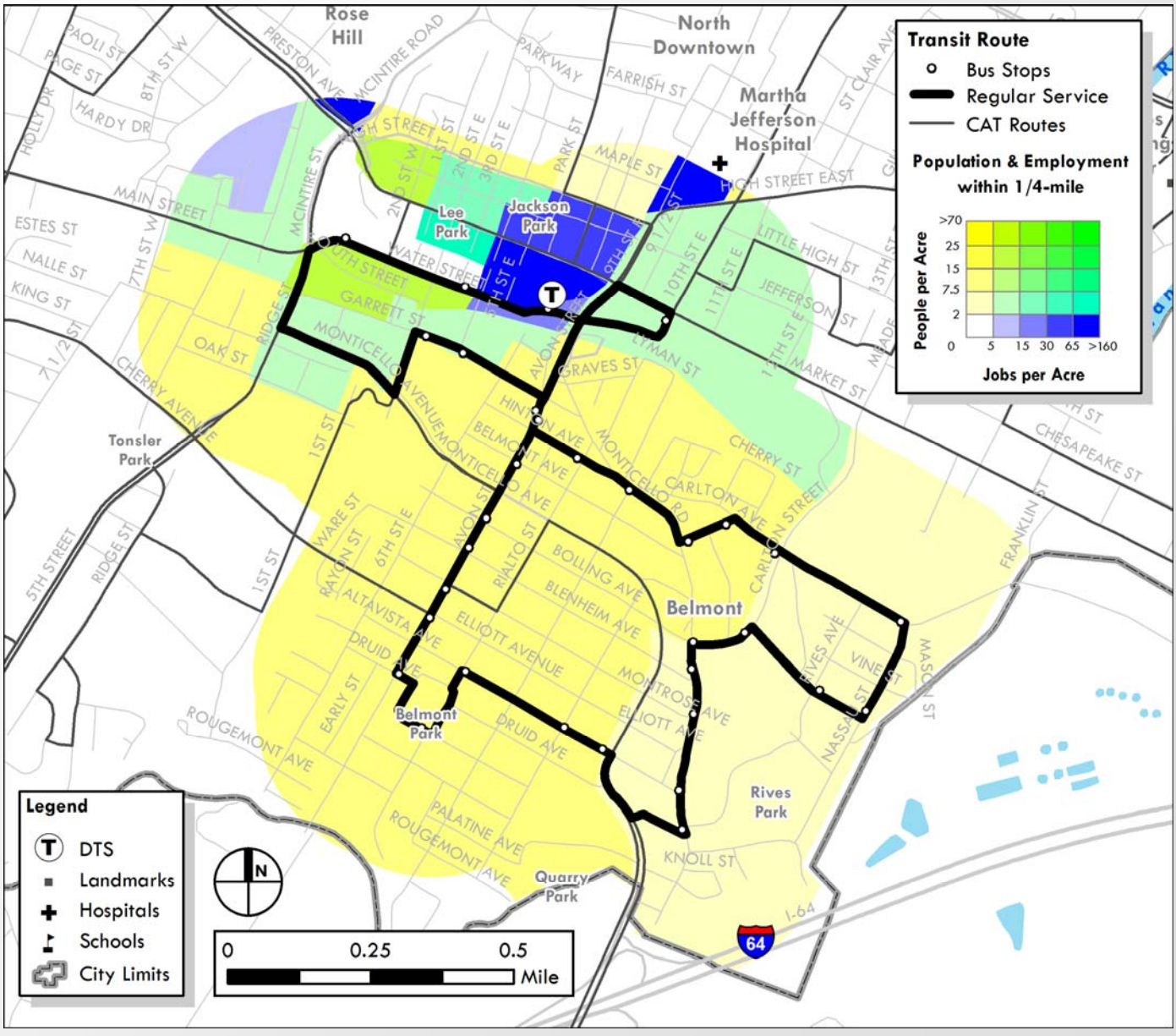


Charlottesville Area Transit – Route 3 – Belmont

Route 3 operates as a one-direction circulator route serving the southern portions of Charlottesville including the Belmont neighborhood. Route 3 also provides circulation along the southern perimeter of the pedestrian mall and downtown's southern neighborhoods on its outbound trip via Water Street, Ridge Street, Monticello Avenue, 2nd Street and Garrett Street.

Of the 17 routes in the CAT system, Route 3 performs above-average on weekdays and in the upper quartile on Saturdays.

Route 3	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:20 a.m. - 6:42 p.m.		6:20 a.m. - 6:42 p.m.	
Frequency (Pk-Mid-Eve)	30-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	8		8	
Route Statistics				
Round Trips	20		13	
Daily Revenue-Hours	10		6.5	
Daily Revenue-Miles	94		61.1	
Peak Buses	1.0		0.5	
Route Productivity				
Boardings (Rank)	243	(7)	169	(5)
Riders/Rev.-Hr. (Rank)	24.3	(5)	26.0	(3)
Riders/Rev.-Mi. (Rank)	2.6	(3)	2.8	(2)
Riders/Trip (Rank)	12.2	(9)	13.0	(5)



Description of Existing Alignment

Route 3 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route deviates north via 2nd Street and Garrett Street before turning south on Avon Street and then east on Hinton Avenue. Route 3 continues east into Monticello Road before turning left on Bainbridge Street and right on Carlton Avenue. The circulation continues via Nassau Street, Hampton Street and Carlton Road. At Monticello Road, Route 3 heads south and then west on Druid Avenue. The route then begins the return trip to DTS through Belmont Park by turning right on Monticello Avenue, left on Alta Vista Avenue, left on Rialto Street, right on Stonehenge Avenue, left on Druid Avenue and right on Avon Street. The final approach to DTS is made by turning east on Market Street, south on 10th Street and west on Water Street.

Route 3 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused. There are also some smaller neighborhood-oriented businesses and light industrial uses scattered along the alignment. Route 3 is the closest route to CAT's operating facility, which is more than one-half mile from the nearest bus stop. Major destinations along Route 3 include:

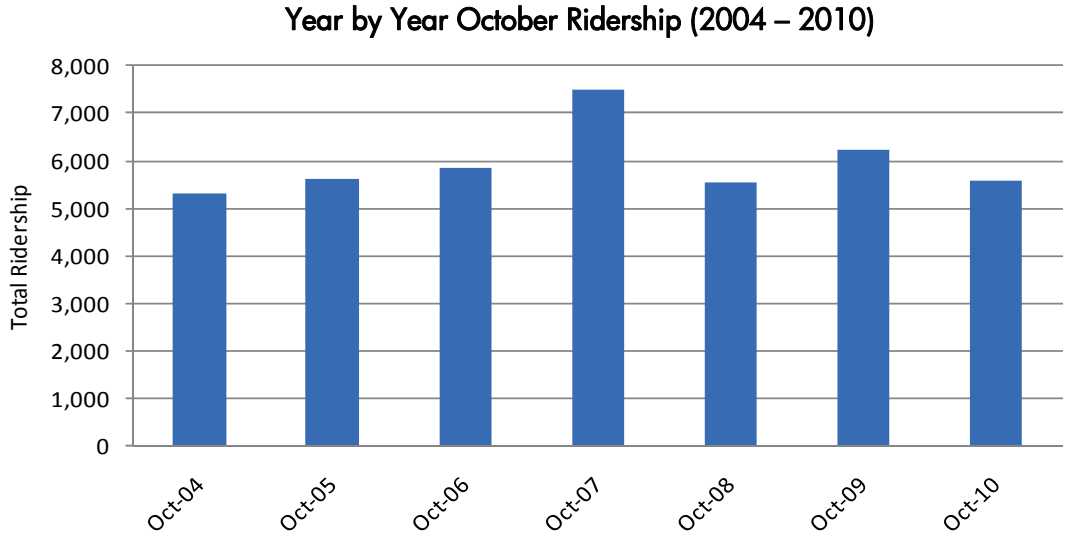
- Piedmont Housing Alliance
- ACAC Fitness & Wellness
- Friendship Court
- Virginia Industries for the Blind
- Worksource Enterprises
- Sunrise Trailer Court
- Belmont Park

Key Route Issues and Observations

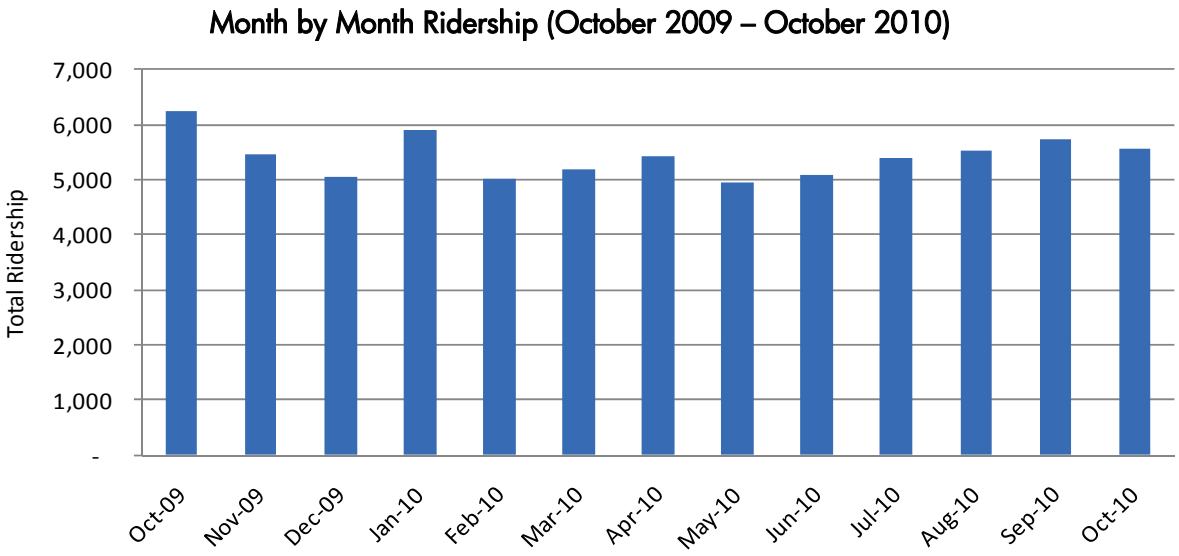
- *Alignment* – Route 3 is comprised of two one-way loops, configured in a "figure-eight" alignment. Part of this alignment is forced by the placement of the DTS and the need to circulate around the perimeter of the pedestrian mall to return east. The larger loop along the southern portion of the alignment serves most of Hinton Avenue, Carlton Avenue, Monticello Road and Avon Street. However, the one-way circulation forces passengers to ride the entire circuit should they use transit for their departing and returning trip.
- *Stops* – Bus stops along Route 3 appear to be adequately spaced every two to three blocks through the downtown circulator alignment. As the route enters the Belmont circulation, stops are much more closely spaced, particularly along Avon Street.
- *Schedule/Span of Service* – Route 3 operates Monday through Saturday from 6:20 a.m. until 6:42 p.m. (the last scheduled trip departs DTS at 6:20 p.m.) at 60-minute frequency. On weekdays, an additional peak bus is provided which improves service frequency to 30 minutes from 6:50 a.m. until 9:12 a.m. and from 2:50 p.m. until 6:12 p.m. Night service along all of Route 3's alignment is provided by Route 21. Sunday service is not offered.
- *Cycle/Layover Times* – Route 3 has a 25-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 6 at the DTS. There are 22 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure as Route 6.
- *Route Transfers* – Route 3 connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates south of downtown. Route 3 also intersects with Route 1B on Monticello Avenue.

Historical Ridership Characteristics

A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 3 has maintained consistent ridership levels through the past seven years. In 2008, Segments of Route 3 (3B) were realigned to new Route 9; thus, there was a slight drop in ridership allocated to Route 3.

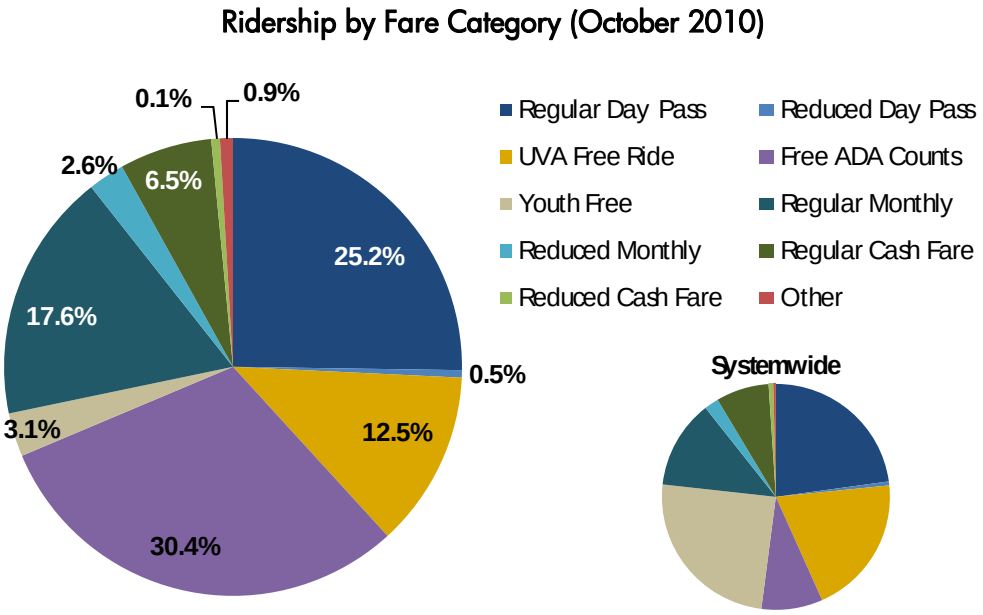


A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. For the most part, ridership is consistent from month to month. October 2009 carried the highest number of riders but this trend did not hold true in October 2010. The lowest ridership was recorded in May 2010.



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Free ADA riders generated the highest number of riders (30.4%). Regular-Fare Day Passes represented the next largest group (25.2%) followed by Regular-Fare Monthly Passes (17.6%). UVA riders (12.5%) and Regular Cash Fare riders (6.5%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 3 are as follows:

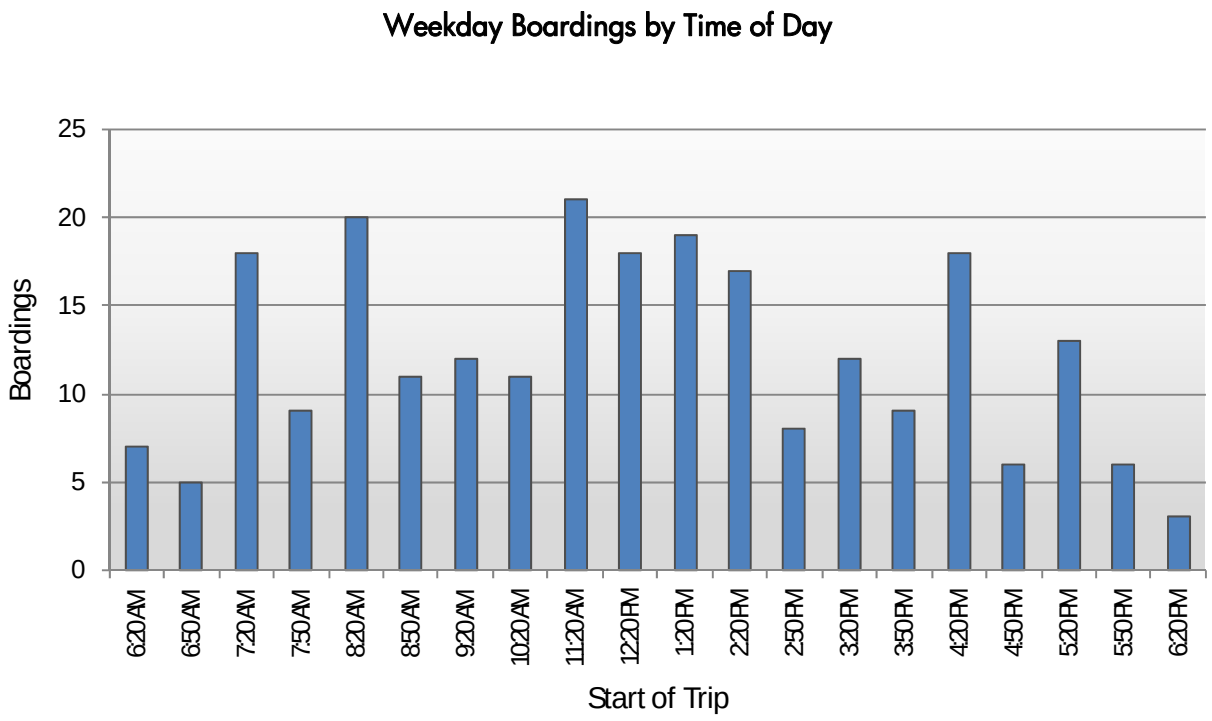
Route 3 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
70	106	67	n/a	243	169	n/a
Maximum Load						
19	13	11	n/a	19	18	n/a
Timepoints Reached On Time						
90%	86%	78%	n/a	84%	74%	n/a

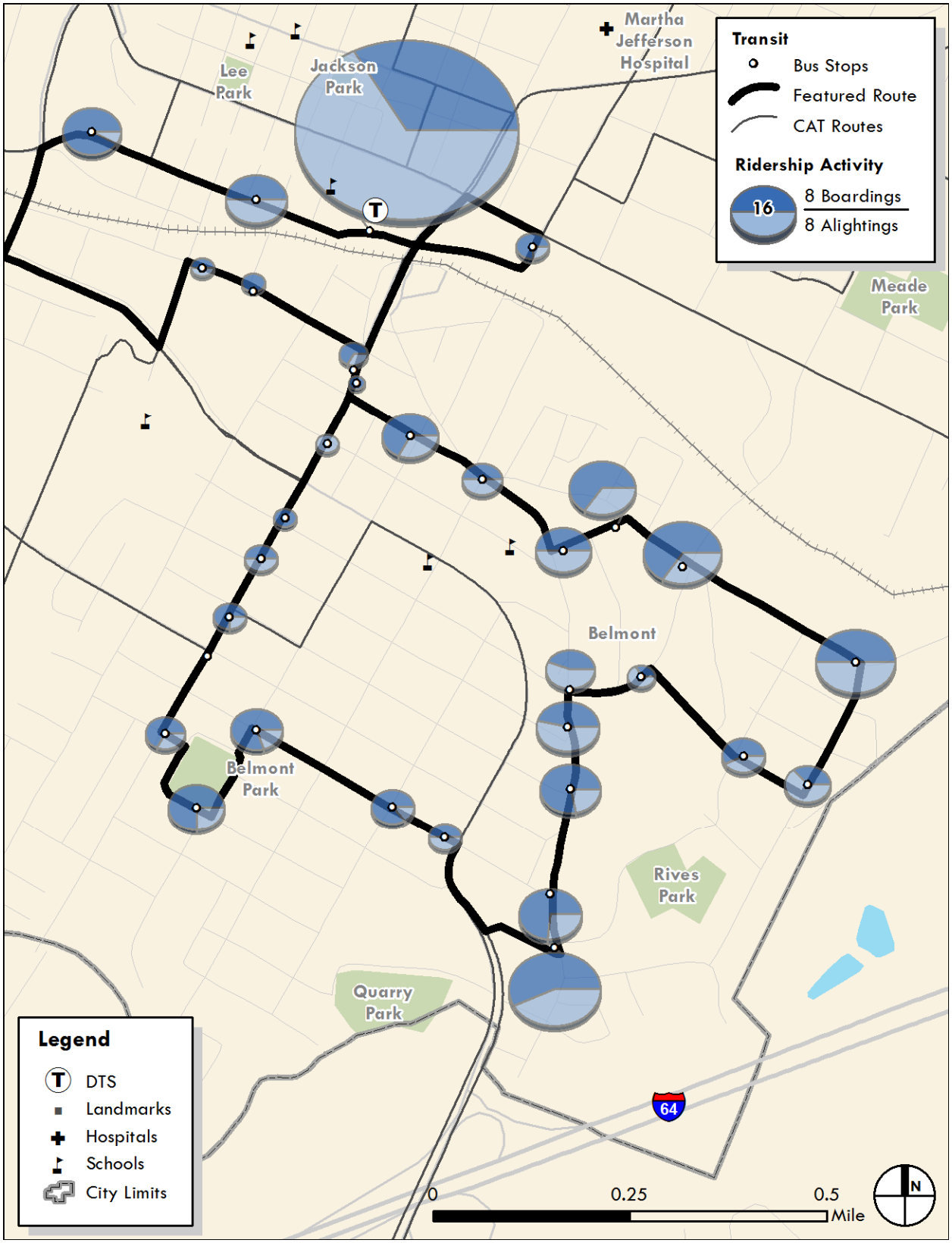
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

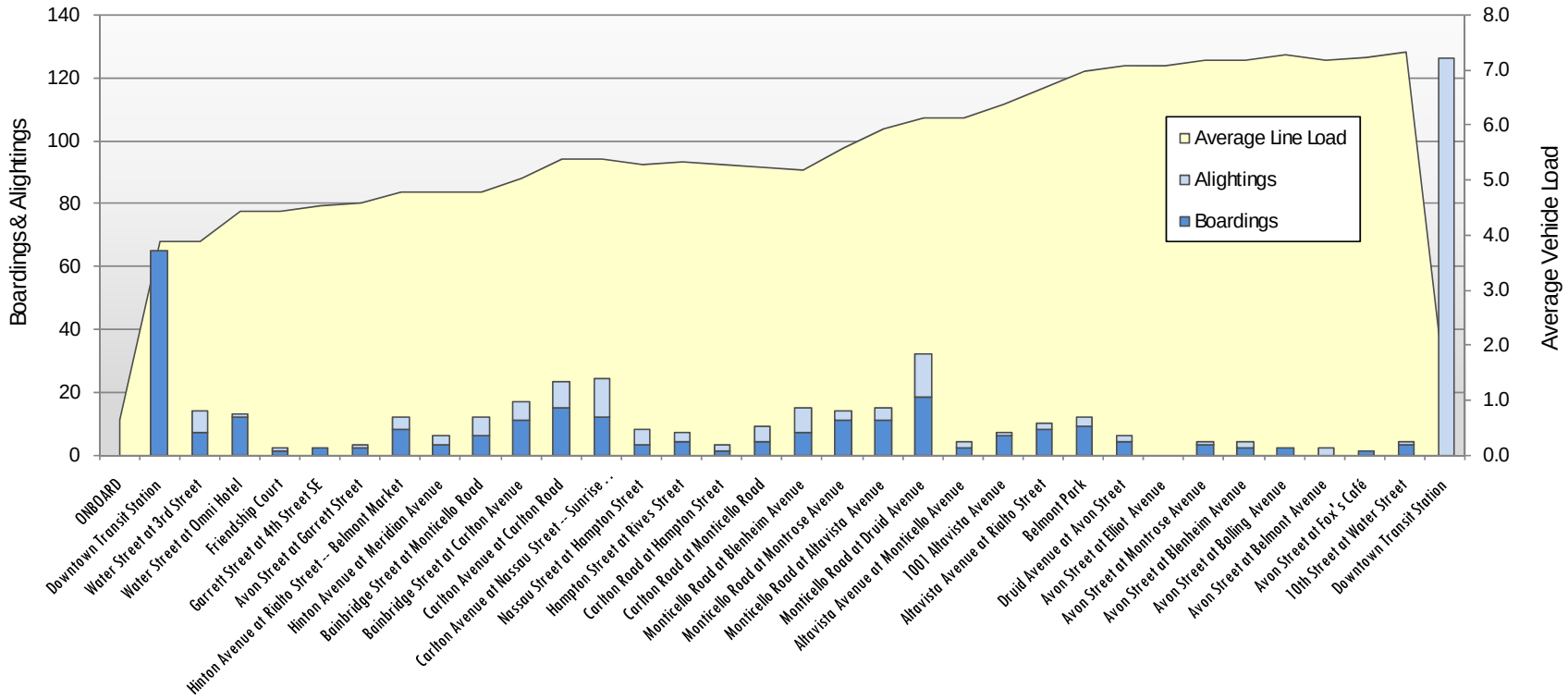
- Ridership on Route 3 is highest during the midday. The morning and afternoon peak ridership were practically equal.
- The maximum observed load was 19 passengers and occurred during the morning peak period. The afternoon peak period had the lowest maximum load.
- The 11:20 a.m. trip carried the most passengers followed by the 8:20 a.m. trip. The 6:20 p.m. (last trip of the afternoon) and the 6:50 a.m. trips recorded the fewest passengers.
- The DTS is the highest volume stop on Route 3. The stop at Monticello Road & Druid Avenue was the next strongest with several others along Carlton Avenue and Monticello Road following closely. Stops along Garrett Street and Avon Street saw relatively few boardings or alightings.
- On-time performance was met 84% of the time throughout the day. Regardless of the time of day, buses were both early and late throughout the course of the route.

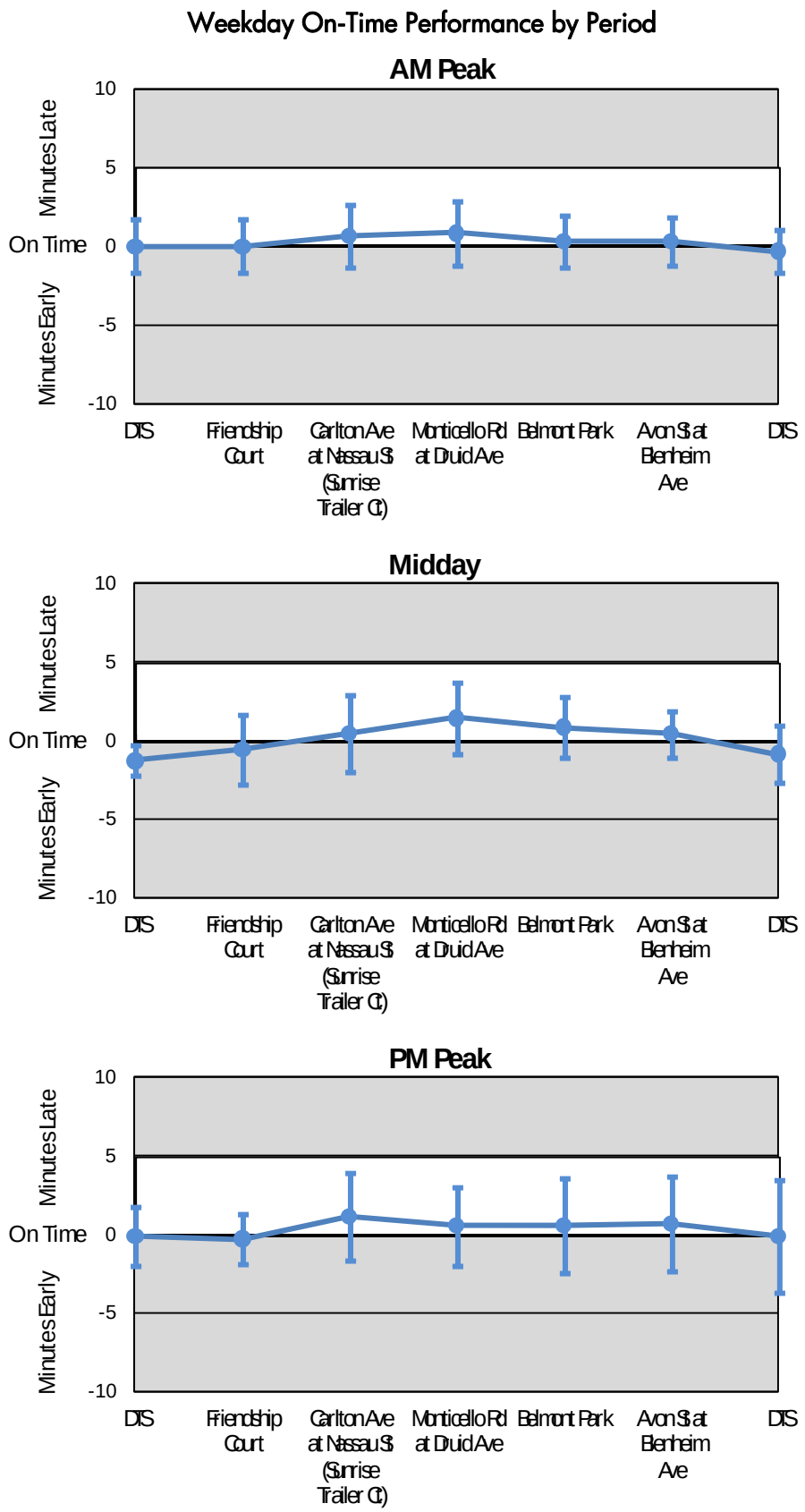

Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:20 AM
6:50 AM
7:20 AM
7:50 AM
8:20 AM
8:50 AM
9:20 AM
10:20 AM
11:20 AM
12:20 PM
1:20 PM
2:20 PM
2:50 PM
3:20 PM
3:50 PM
4:20 PM
4:50 PM
5:20 PM
5:50 PM
6:20 PM
Start of Trip

Weekday Ridership Activity



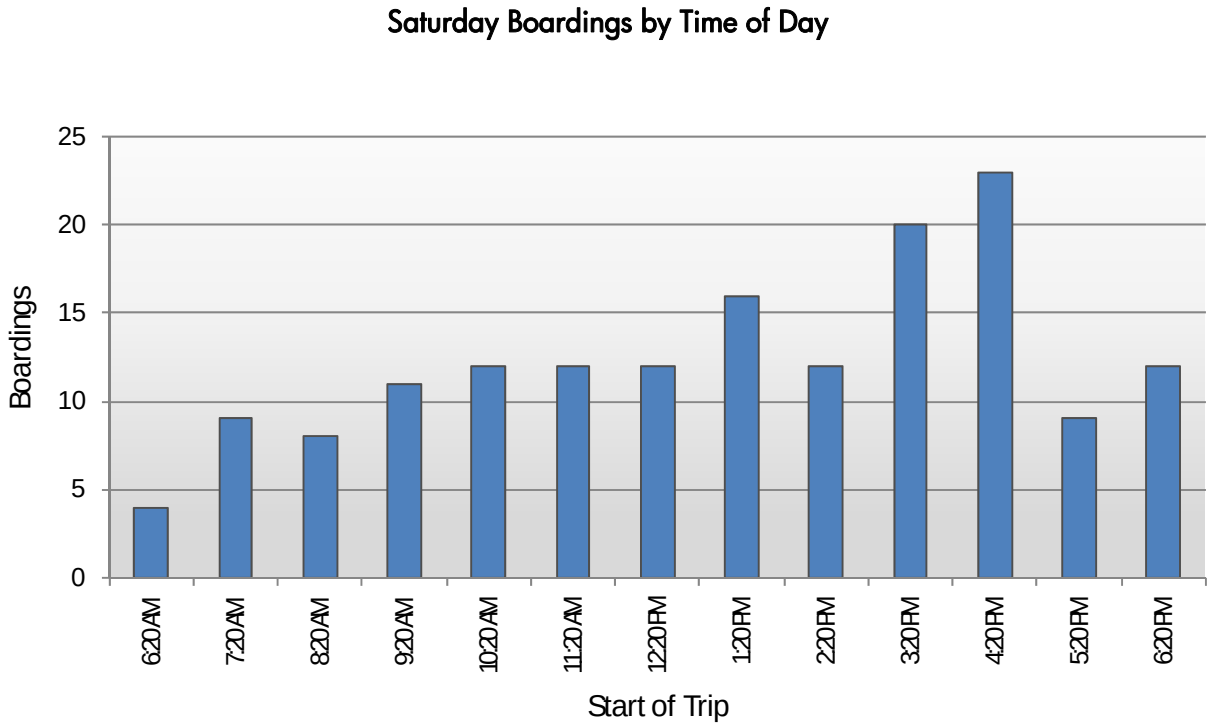
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Midday
PM Peak
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
Friendship Court
Carlton Ave at Nassau St (Sunrise Trailer Ct)
Monticello Rd at Druid Ave
Belmont Park
Avon St at Berheim Ave
DTS

Saturday Observations

- The busiest trips of the day were at 4:20 p.m. followed by 3:20 and 1:20 p.m. The 6:20 a.m. (first trip of the day) recorded the lowest number of riders.
- Saturday trips carry 70% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 18.
- Saturday trips were on-time 74% of the time. Morning trips tend to run early while midday and afternoon trips tend to operate late. For this ridecheck, the 3:20 and 4:20 p.m. trips were exceptionally late, ranging from 9-15 minutes behind schedule.

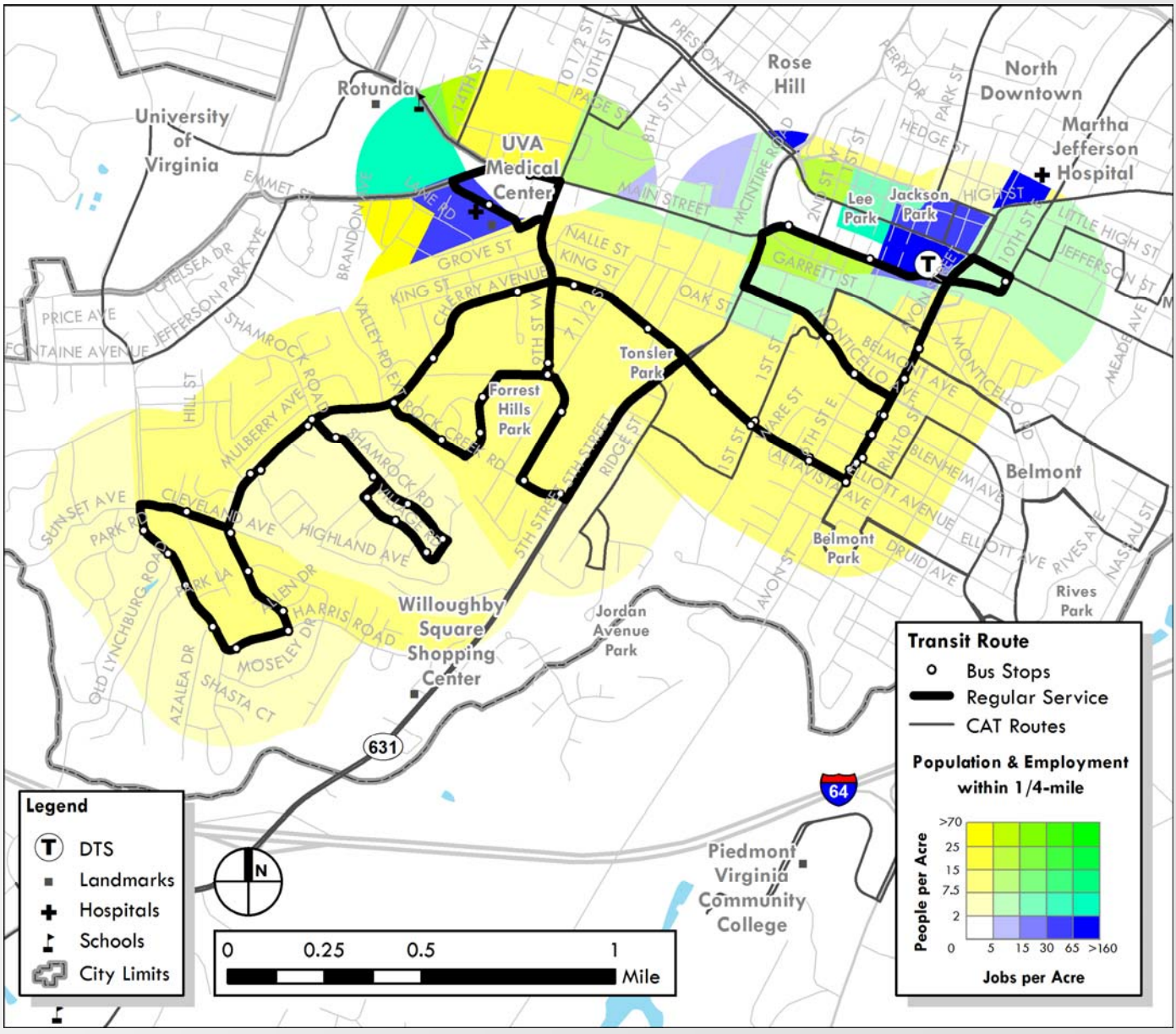


Charlottesville Area Transit – Route 4 – UVA Hosp., Fry's Spring, Downtown

Route 4 operates as circulator route connecting the southeastern neighborhoods of Charlottesville with downtown and the University of Virginia Hospital. The route is one of the most complex in the CAT system as it backtracks and serves its many branches multiple times within each round trip cycle.

Of the 17 routes in the CAT system, Route 4 is an average performer on weekdays and Saturdays.

Route 4	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 a.m. - 6:37 p.m.		6:45 a.m. - 6:25 p.m.	
Frequency (Pk-Mid-Eve)	30-60-n/a		60-60-n/a	
Cycle Time (min)	60		60	
Layover Time (min)	5		5	
Route Statistics				
Round Trips	19		12	
Daily Revenue-Hours	19		12	
Daily Revenue-Miles	264.1		166.8	
Peak Buses	2.0		1.0	
Route Productivity				
Boardings (Rank)	359	(4)	125	(7)
Riders/Rev.-Hr. (Rank)	18.9	(8)	10.4	(9)
Riders/Rev.-Mi. (Rank)	1.4	(11)	0.7	(10)
Riders/Trip (Rank)	18.9	(4)	10.4	(7)



Description of Existing Alignment

Route 2B begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. At Monticello Avenue, the route turns left and then right on Avon Street and right on Elliott Avenue. Route 4 then turns left on 5th Street, right on Bailey Road and right on Prospect Avenue before turning left on Forest Hills Avenue. At Forest Ridge Road, the route continues right on Rock Creek Road to Cherry Road. Route 4 then heads to UVA Hospital by turning right on Cherry Avenue, left on Roosevelt Brown Boulevard, left on Crispel Drive, right on Lee Street, proceeding to UVA Hospital. The route returns to Cherry Avenue via Jefferson Park Avenue, West Main Street and Roosevelt Brown Boulevard and then turns west. Route takes Cherry Avenue to Cleveland Avenue, turning right and circling the block via Jefferson Park Avenue, Harris Road and Willard Drive. Route 4 then turns right on Cherry Avenue and right again to loop around Shamrock Road via Antoinette Avenue, Village Road and Trailridge Road back to Shamrock Road. At Cherry Avenue, the route turns right and continues to UVA Hospital, following the same loop via Roosevelt Brown Boulevard as done previously. Heading south on Roosevelt Brown Boulevard, the route continues across Cherry Avenue to serve Forest Ridge again via Forest Ridge Road and Rock Creek Road. At Cherry Avenue, the route travels east for the return trip to DTS via Elliot Avenue, Avon Street, Market Street, 10th Street and Water Street.

Route 4 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused and UVA is more medically oriented in the area surrounding the hospital. There are also some smaller neighborhood-oriented businesses scattered along the Cherry Avenue portion of the alignment. Major destinations along Route 4 include:

- Piedmont Housing Alliance
- ACAC Fitness and Wellness
- Crescent Hall
- Blue Ridge Commons
- UVA Medical Center
- UVA Corner

Key Route Issues and Observations

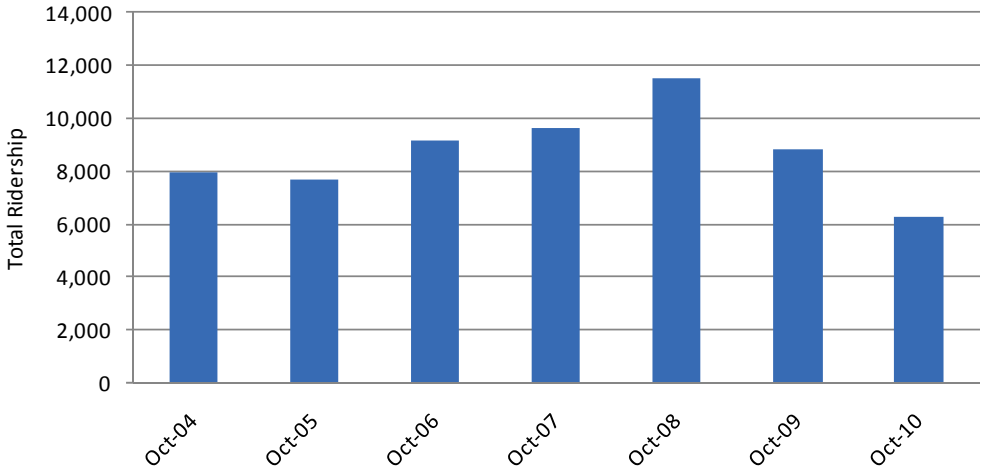
- *Alignment* – Route 4 is primarily comprised of multiple loops. Part of this alignment is forced by the placement of the DTS. However, the majority of the loops are designed to provide as much service coverage to as many people as possible. The repetitive nature of some of the loops emphasizes the desire to connect origins and destinations within the route. However, out-of-direction travel is unavoidable with so many different branches and loops occurring within the same route.
- *Stops* – Bus stops along Route 4 are closely spaced within the neighborhoods and more widely spaced along corridors such at 5th Street and Cherry Avenue.
- *Schedule/Span of Service* – Route 6 operates Monday through Saturday from 6:30 a.m. until 6:25 p.m. (the last scheduled trip departs DTS at 5:30 p.m.) at 60-minute frequency. On weekdays, an additional peak bus is provided which improves service frequency to 30 minutes from 6:45 a.m. (partial trip) until 9:37 a.m. and from 2:45 p.m. (partial trip) until 6:37 p.m. Night service along all much of Route 4's alignment is provided by Route 22. Sunday service is not offered.
- *Cycle/Layover Times* – Route 4 has a 60-minute cycle time and requires one bus to operate at 60-minute frequency. During peak periods, a second bus is added. There are 55 minutes of scheduled running time with five minutes of scheduled recovery time at the DTS prior to the next departure.

- *Route Transfers* – Route 4 connects with all CAT routes (except Route 5) at the DTS. Route 4 also intersects with Routes 2B and 6 on 5th Street as well as Routes 6, 7 and the Trolley on West Main Street.

Historical Ridership Characteristics

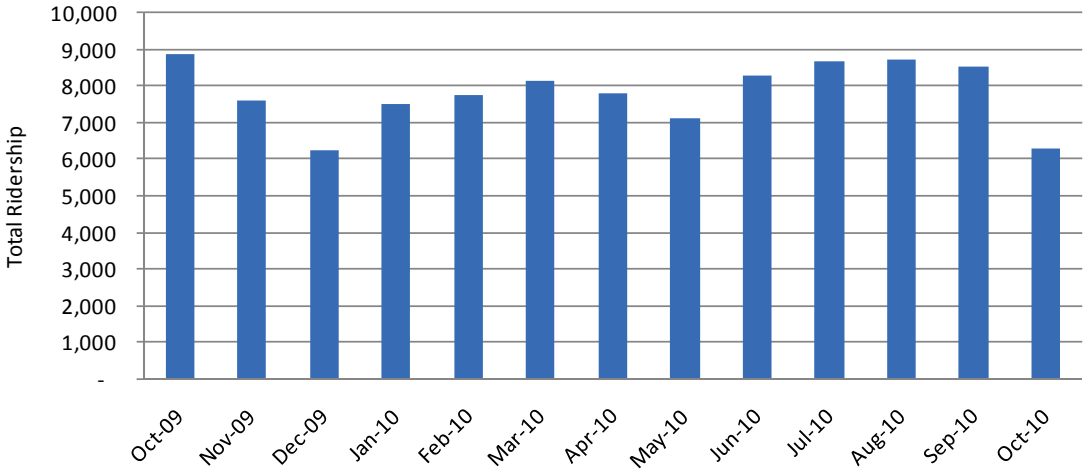
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 4 has shown growth leading up to 2008. In 2008, two distinct versions of Route 4 (4A and 4B) were restructured. In addition, portions of Route 4 along Jefferson Park Avenue were discontinued in 2010 in anticipation of bridge reconstruction. Thus, ridership has shown declines since 2008.

Year by Year October Ridership (2004 – 2010)



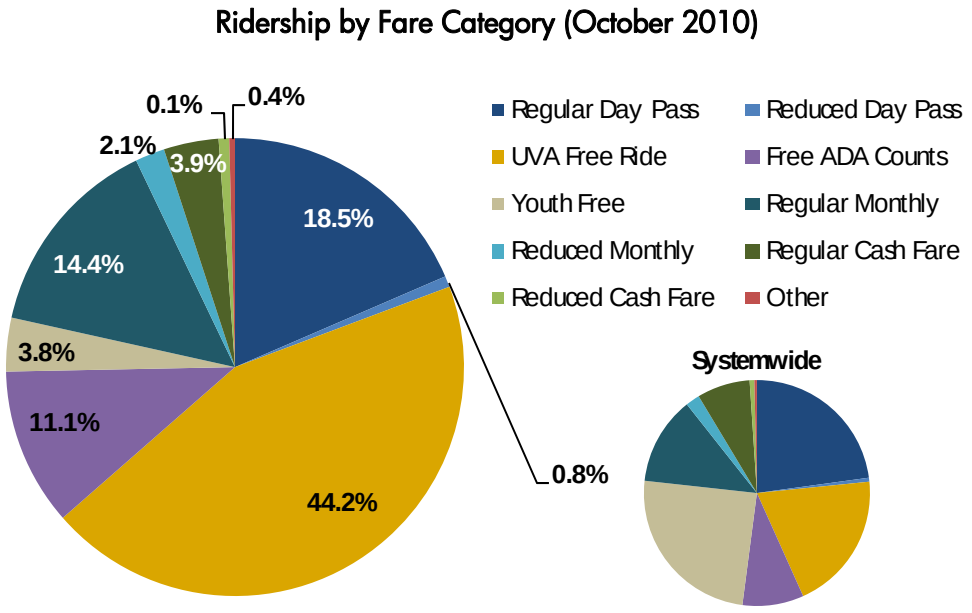
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Ridership appears to be lowest in December and October (2010). The highest months are October (2009), July, August and September.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. UVA Riders generated the highest number of passengers (44.2%). Regular-Fare Day Pass Riders represented the next largest group (18.5%). Regular-Fare Monthly Pass Riders (14.4%) and Free ADA Riders (11.1%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 4 are as follows:

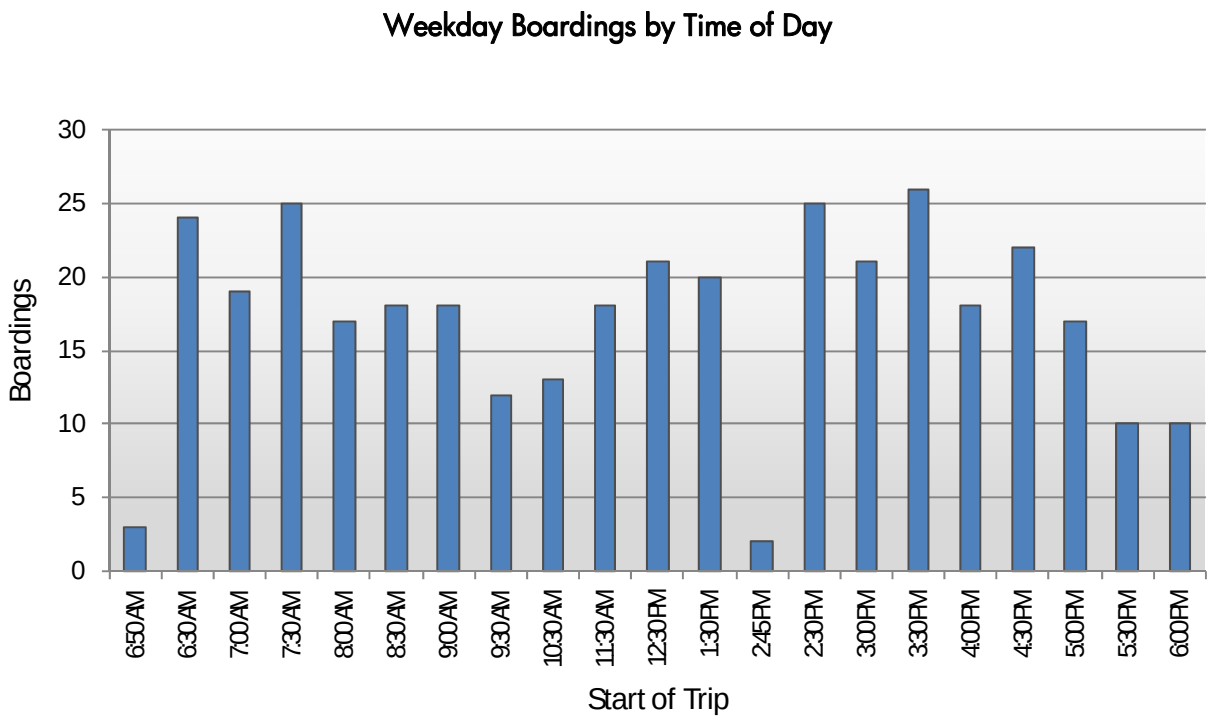
Route 4 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
106	129	124	n/a	359	125	n/a
Maximum Load						
15	10	14	n/a	15	14	n/a
Timepoints Reached On Time						
93%	98%	37%	n/a	75%	62%	n/a

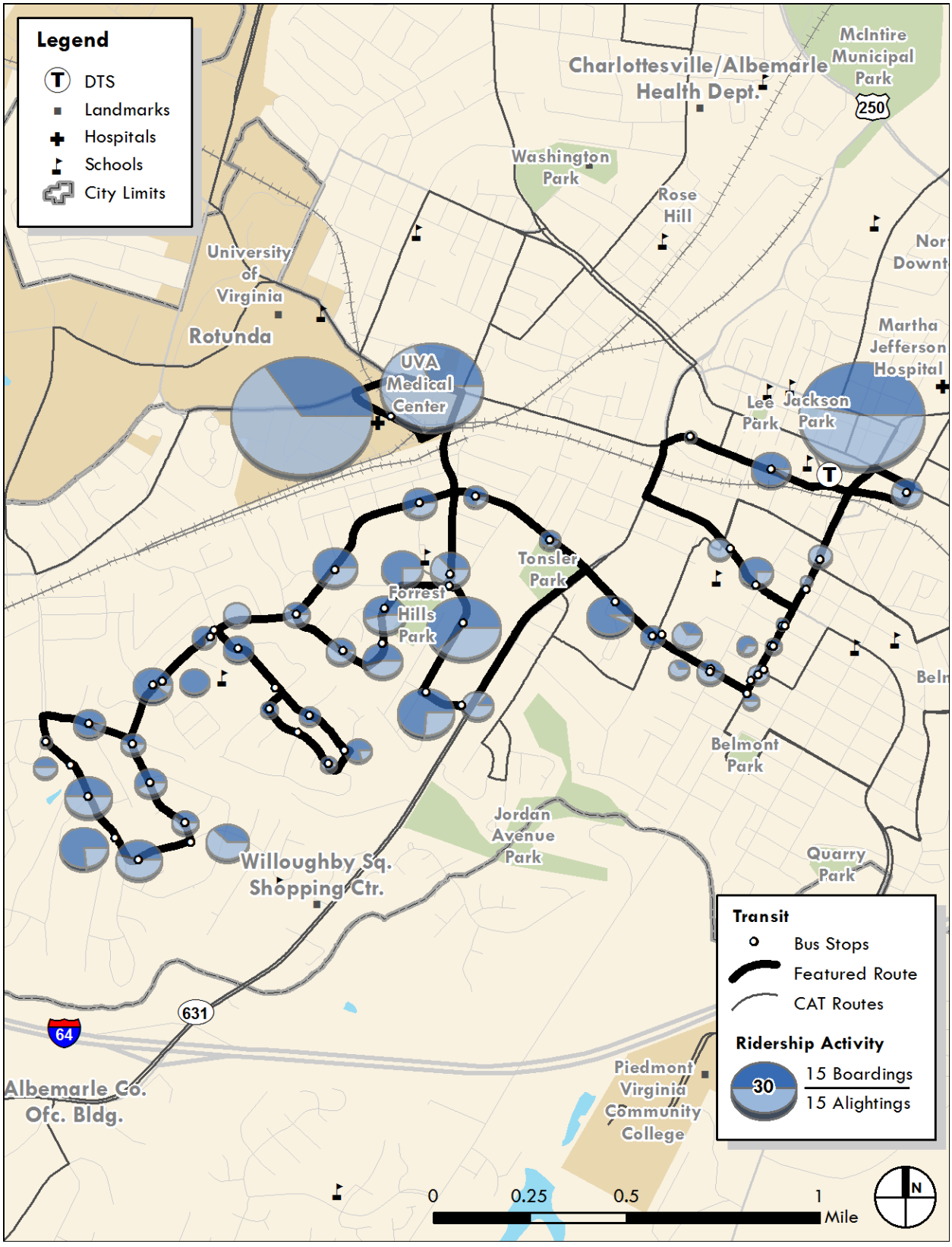
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

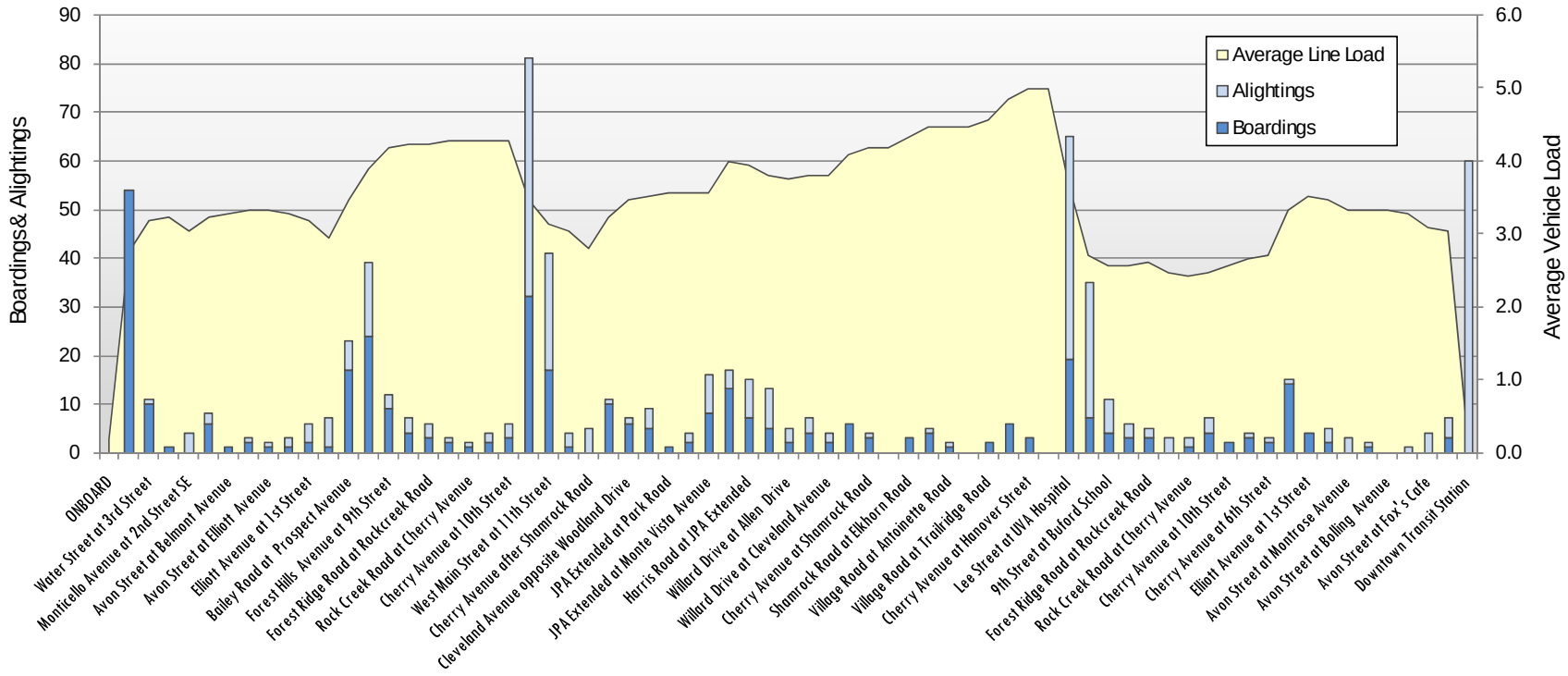
- Ridership on Route 4 is highest during the morning peak and afternoon peak hours.
- The maximum observed load was 15 passengers and occurred during the a.m. peak.
- The 3:30 p.m. trip carried the most passengers followed by the 7:30 a.m. and 2:30 p.m. trips. The 6:50 a.m. and 2:45 p.m. partial trips carried the fewest passengers.
- The DTS is the highest volume stop on Route 4. The stops at West Main Street and UVA Hospital were the next strongest.
- On-time performance was met 75% of the time. Buses were both early and late. However, late buses were more prevalent in the afternoon peak throughout the entire length of the route.

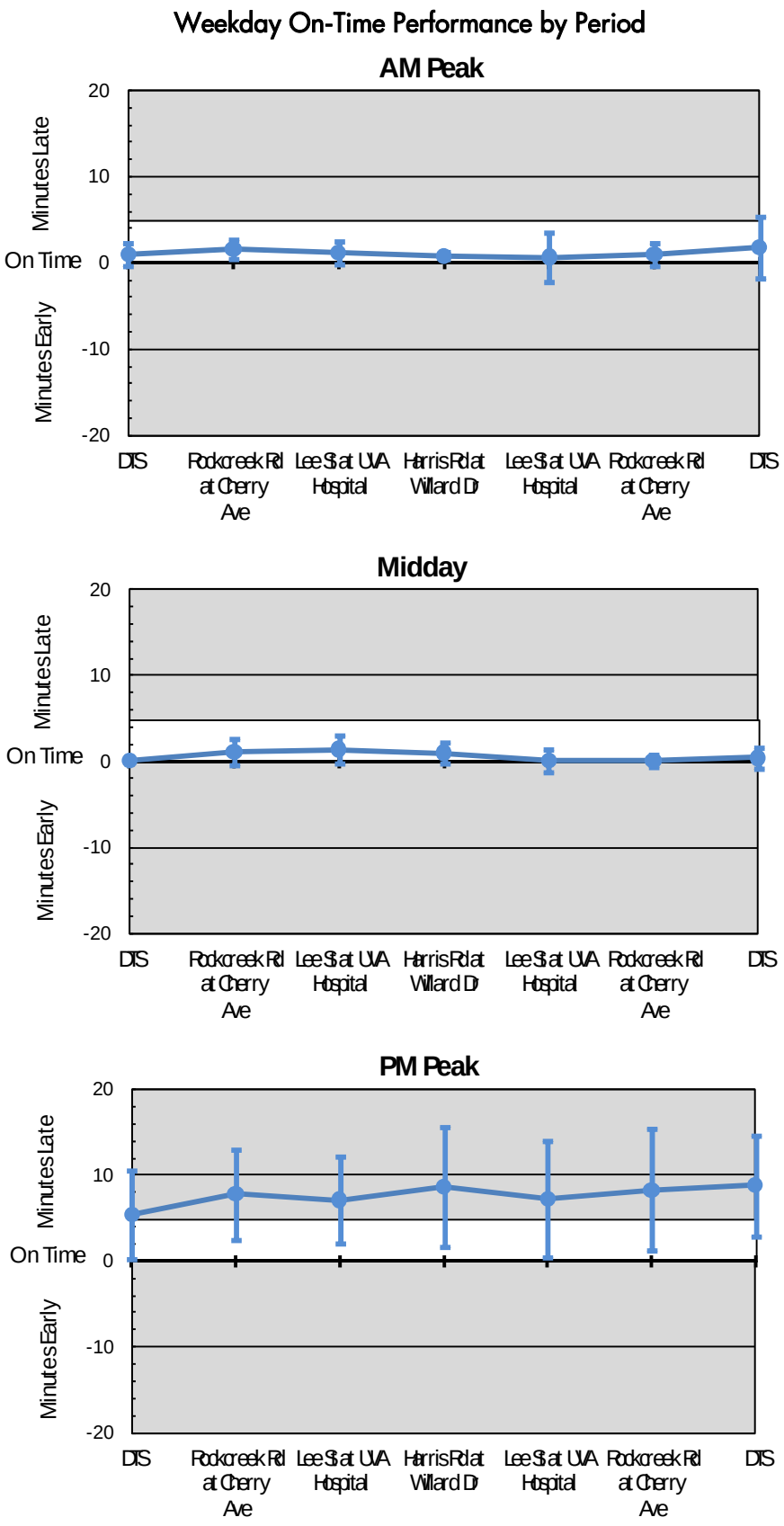

Weekday Boardings by Time of Day
Boardings
30
25
20
15
10
5
0
6:50 AM
6:30 AM
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:30 AM
11:30 AM
12:30 PM
1:30 PM
2:45 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
Start of Trip

Weekday Ridership Activity



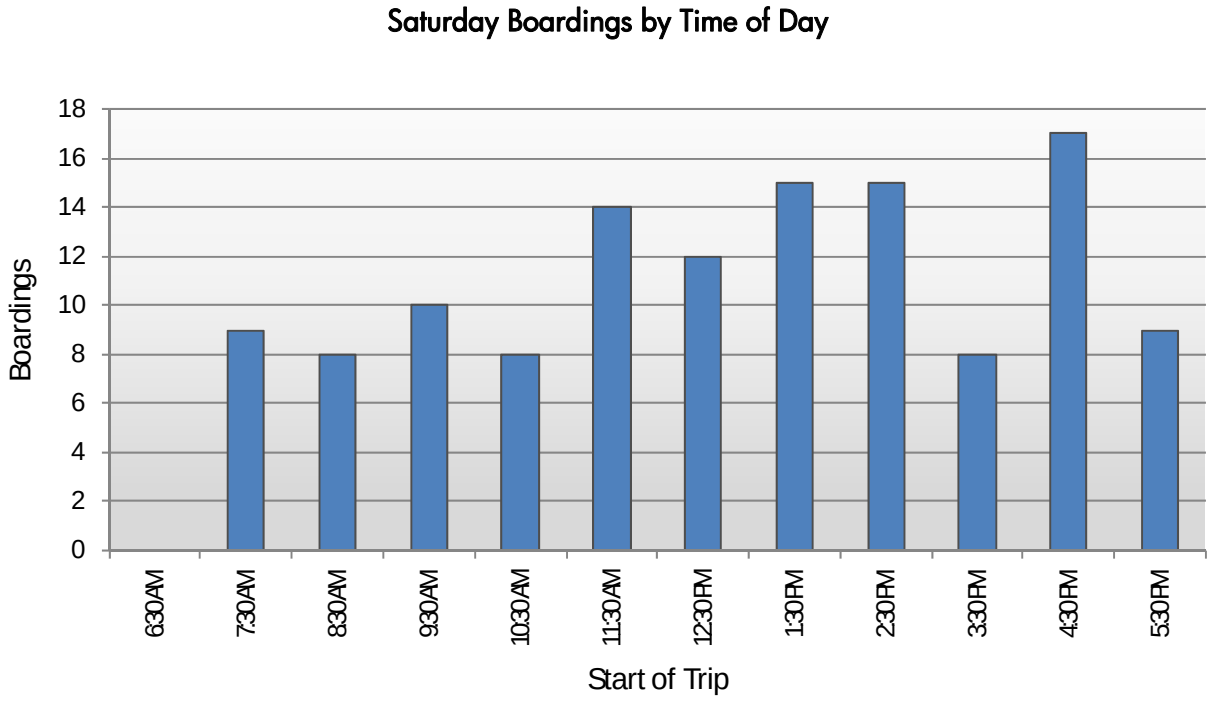
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Minutes Late
On Time
Minutes Early
20
10
0
-10
-20
DTS
Rockcreek Rd at Cherry Ave
Lee St at UVA Hospital
Harris Rd at Willard Dr
Lee St at UVA Hospital
Rockcreek Rd at Cherry Ave
DTS
Midday
Minutes Late
On Time
Minutes Early
20
10
0
-10
-20
DTS
Rockcreek Rd at Cherry Ave
Lee St at UVA Hospital
Harris Rd at Willard Dr
Lee St at UVA Hospital
Rockcreek Rd at Cherry Ave
DTS
PM Peak
Minutes Late
On Time
Minutes Early
20
10
0
-10
-20
DTS
Rockcreek Rd at Cherry Ave
Lee St at UVA Hospital
Harris Rd at Willard Dr
Lee St at UVA Hospital
Rockcreek Rd at Cherry Ave
DTS

Saturday Observations

- The busiest trip of the day was at 4:30 p.m. followed closely by 1:30 and 2:30 p.m. The 6:30 a.m. trip (first trip of the morning) had no riders.
- Saturday trips carry 35% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 14.
- Saturday trips were on-time 62% of the time. Late buses in the afternoon were especially problematic.

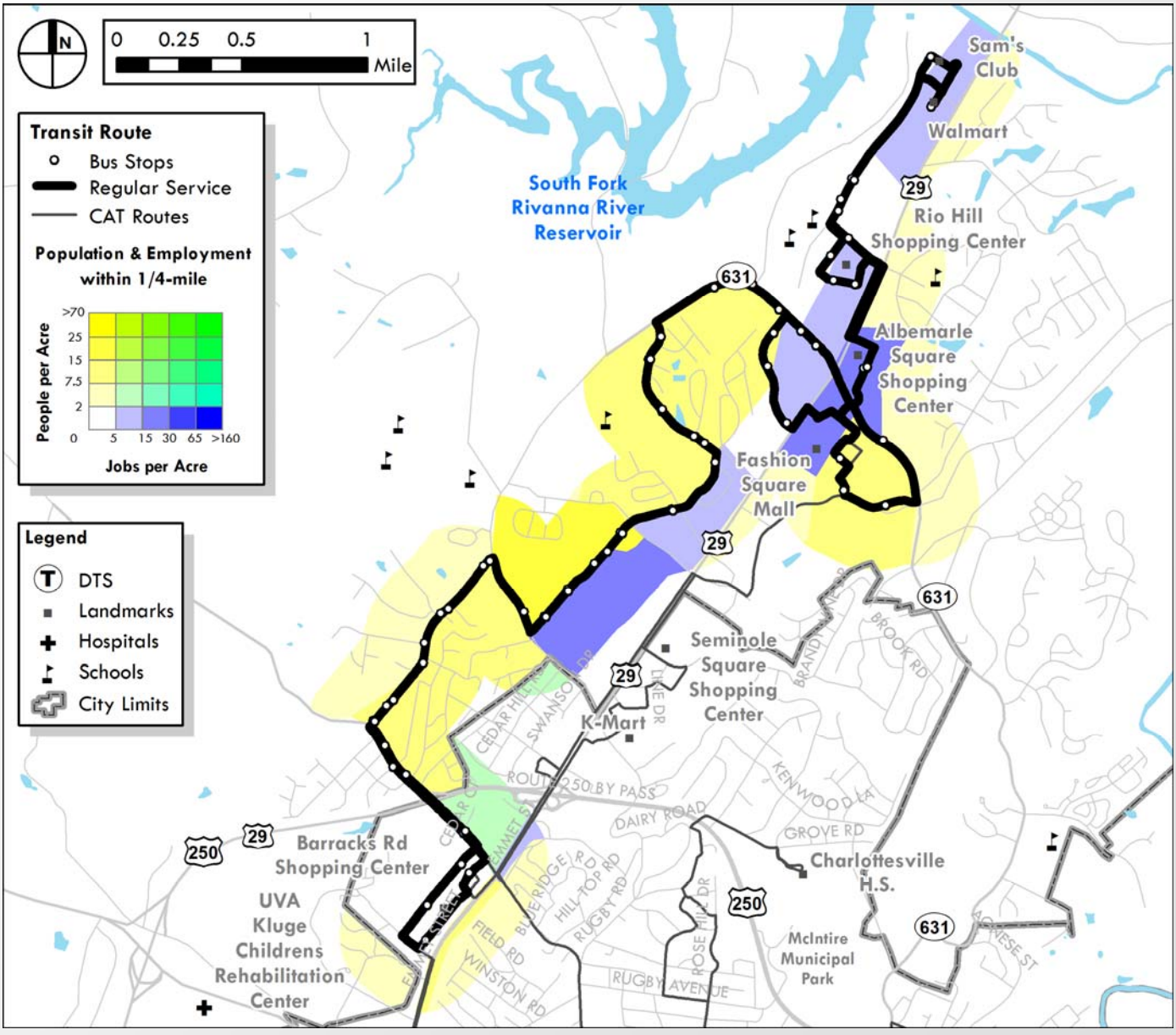


Charlottesville Area Transit – Route 5 – Walmart to Barracks Rd. Shopping Center

Route 5 operates primarily as a linear route connecting Barracks Road Shopping Center with commercial and residential interests along the Charlottesville-Albemarle County border and US 29 corridor, including Fashion Square Mall. Route 5 is the only CAT route that does not serve the Downtown Transit Station (DTS). Operating costs for Route 5 are funded by Albemarle County.

Of the 17 routes in the CAT system, Route 5 is an average performer on weekdays. However, Route 5's performance is one of the highest on Saturdays.

Route 5	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:15 a.m. - 10:55 p.m.		6:15 a.m. - 10:55 p.m.	
Frequency (Pk-Mid-Eve)	30-30-30		30-30-30	
Cycle Time (min)	45		45	
Layover Time (min)	0		0	
Route Statistics				
Round Trips	68		62	
Daily Revenue-Hours	51.1		46.6	
Daily Revenue-Miles	557.6		508.4	
Peak Buses	1.5		1.5	
Route Productivity				
Boardings (Rank)	705	(3)	759	(3)
Riders/Rev.-Hr. (Rank)	13.8	(10)	16.3	(6)
Riders/Rev.-Mi. (Rank)	1.3	(10)	1.5	(6)
Riders/Trip (Rank)	10.4	(10)	12.2	(6)



Description of Existing Alignment

Route 5 begins at the Walmart and Sam's Club in Albemarle County and travels south on Berkmar Drive. At Woodsbrook Drive, the route travels east (deviating into Rio Hill Shopping Center on south bound trips) and then south on US 29. From here, the route travels through Albemarle Square Shopping Center and then across Rio Road into the Fashion Square Mall (on northbound trips, Route 5 serves Hillsdale Drive and Rio Road After leaving the mall). From Fashion Square Mall, Route 5 exits south onto US 29 and then west on Berkmar Drive (this segment is not served on northbound trips). At Rio Road, the route turns left, followed by another left on Four Seasons Drive and a right on Greenbrier Drive. At Hydraulic Drive, Route 5 turns west and then south on Georgetown Road to Barracks Road. The bus then enters Barracks Road Shopping Center to its terminus. To return northbound, Route 5 exits the shopping center via Arlington Boulevard and Millmont Street.

Route 5 primarily serves a variety of single and multi-family residential interests throughout the length of its route as well as a significant number of commercial uses. The commercial uses along the route are primarily retail. Given Route 5's proximity to UVA, it is popular with college students. Major destinations along Route 5 include:

- Sam's Club
- Walmart
- Lowe's
- Rio Hill Shopping Center
- Albemarle Square Shopping Center
- Fashion Square Mall
- Barracks Road Shopping Center

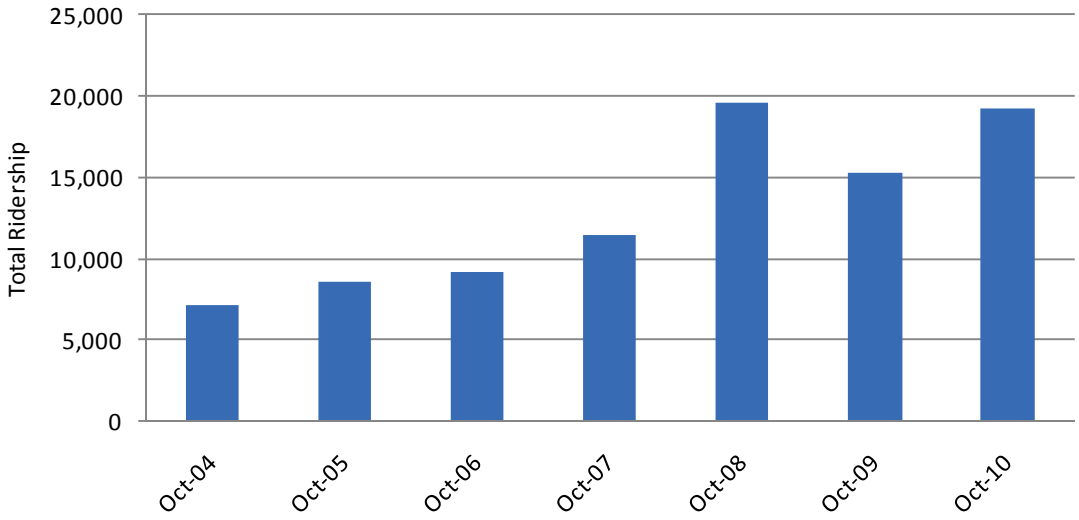
Key Route Issues and Observations

- *Alignment* – Route 5 is primarily linear and bi-directional. However, there are limited segments and stops that only receive service in one direction. Travel within Barracks Road Shopping Center was observed to be congested with pedestrian and automobile traffic, making it challenging for transit buses to navigate. This problem is only exacerbated during peak shopping periods.
- *Stops* – Bus stops along Route 5 are consistently spaced as demand dictates. Stops along Four Seasons Drive and Commonwealth Drive as well as Barracks Road near Georgetown Road appear to be spaced a little more closely than normal.
- *Schedule/Span of Service* – Route 5 operates Monday through Saturday from 6:15 a.m. until 10:55 p.m. (the last scheduled trip departs Walmart at 10:15 p.m.) at 30-minute frequency. Sunday service is not offered.
- *Cycle/Layover Times* – Route 5 has a 90-minute cycle time and requires three buses to operate at 60-minute frequency. There are 80 minutes of scheduled running time with five minutes of scheduled recovery time at Fashion Square Mall (southbound trips only) and another five minutes of scheduled recovery time at Barracks Road Shopping Center.
- *Route Transfers* – Route 5 connects with Route 7 at the Fashion Square Mall. Route 5 also connects with Routes 7 and 8 as well as UTS at Barracks Road Shopping Center.

Historical Ridership Characteristics

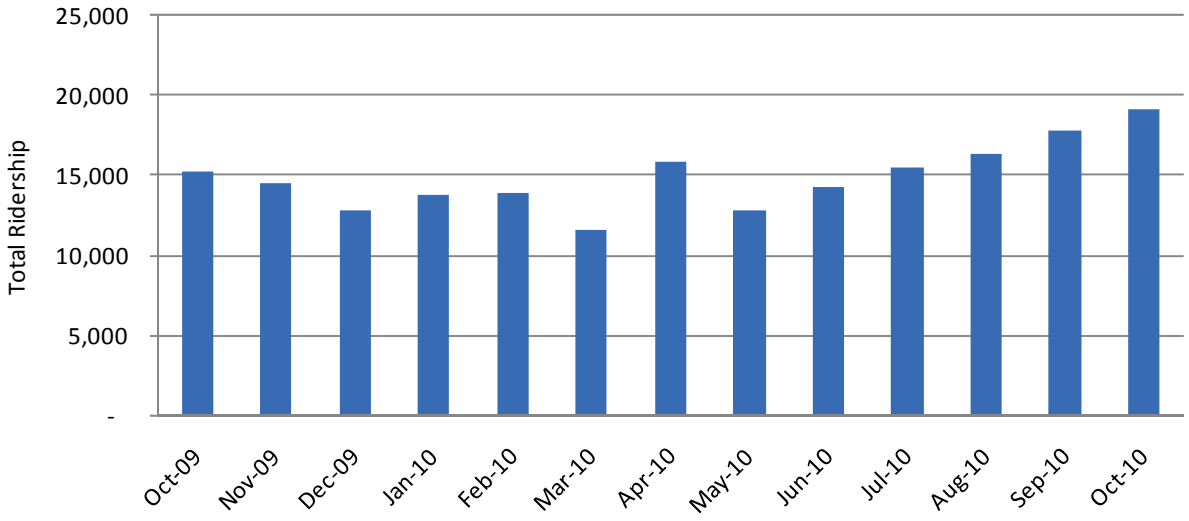
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 5 has shown modest to significant increases over the past seven years. The most dramatic increase occurred in 2008 when frequency was improved to 30 minutes.

Year by Year October Ridership (2004 – 2010)



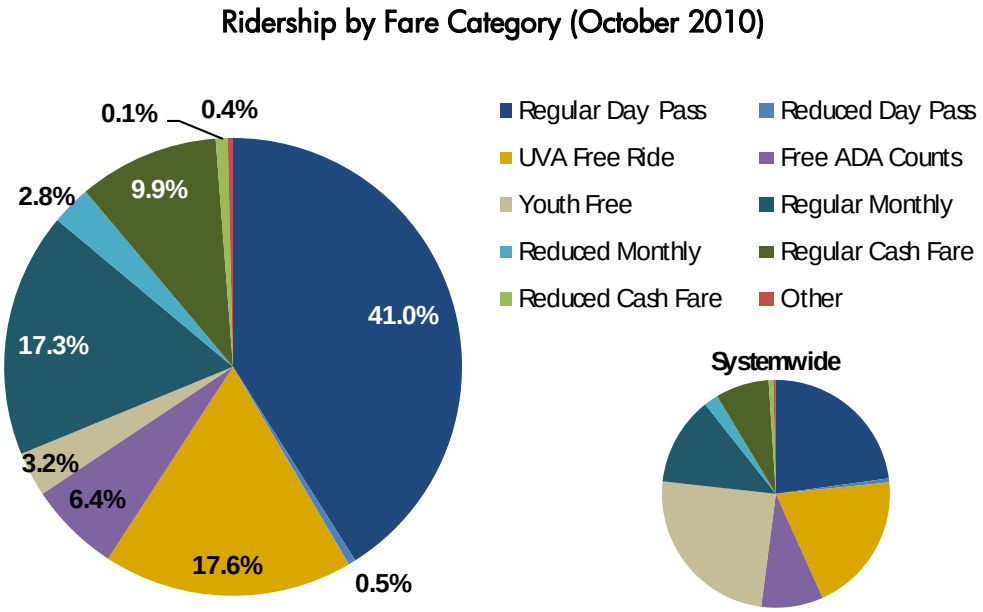
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. October 2010 appears to be Route 5's strongest month followed by September 2010. March 2010 appears to be the weakest month.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Passes generated the highest number of riders (41%). These pass-holders were much more prevalent than the systemwide average. UVA riders and Regular-Fare Monthly Passes represented the next largest groups with more than 17% each. Regular Cash Fare riders were also well represented at nearly 10%.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

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- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 5 are as follows:

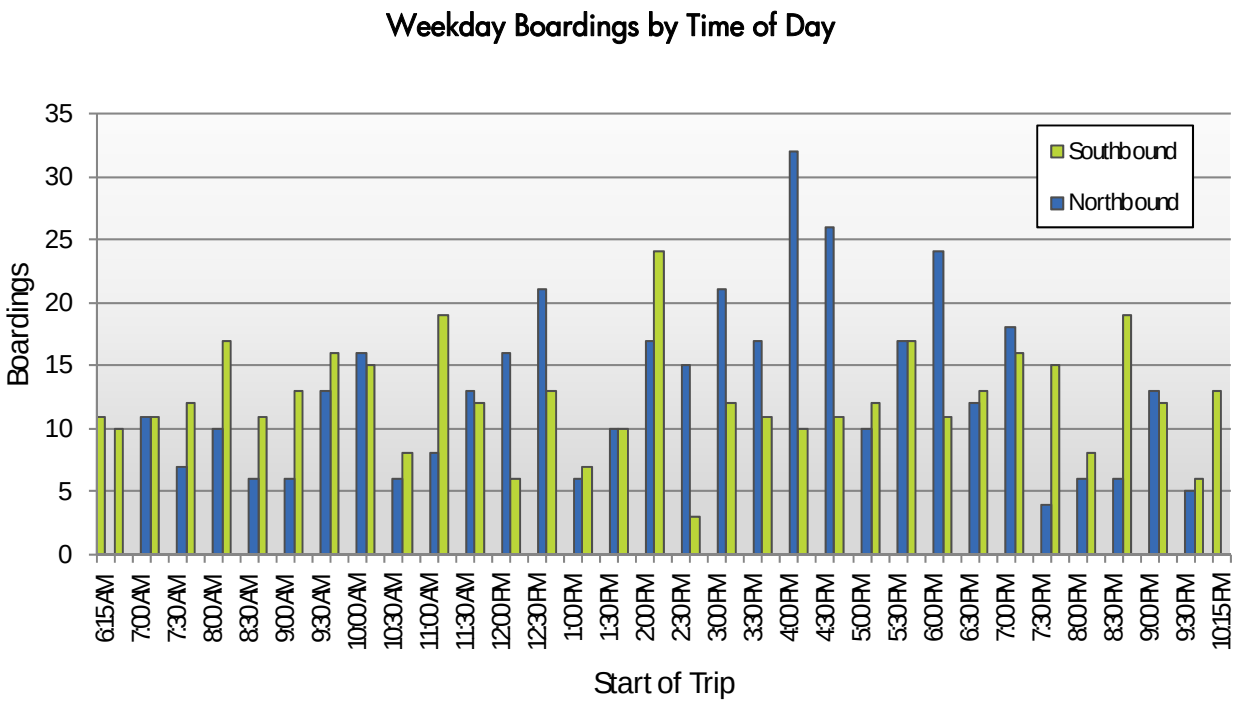
Route 5 Ridecheck Results Summary

	Weekday					Saturday	Sunday
	AM	MID	PM	EVE	Daily		
Boardings							
SB	72	146	84	102	404	360	n/a
NB	34	147	147	64	392	360	n/a
Maximum Load							
SB	13	16	13	14	16	17	n/a
NB	10	15	20	13	20	25	n/a
Timepoints Reached On Time							
SB	85%	86%	80%	80%	83%	76%	n/a
NB	100%	82%	70%	89%	83%	75%	n/a

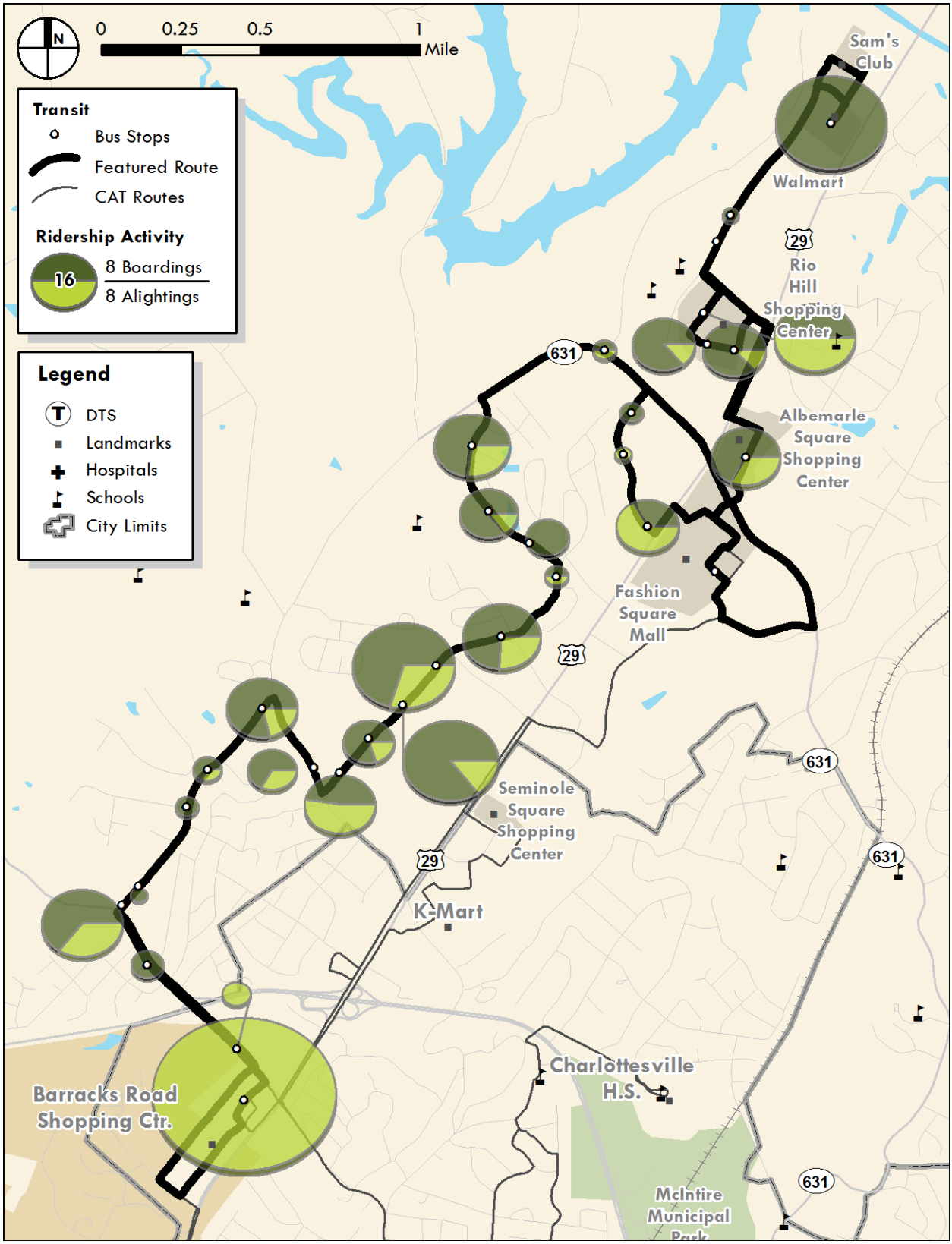
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

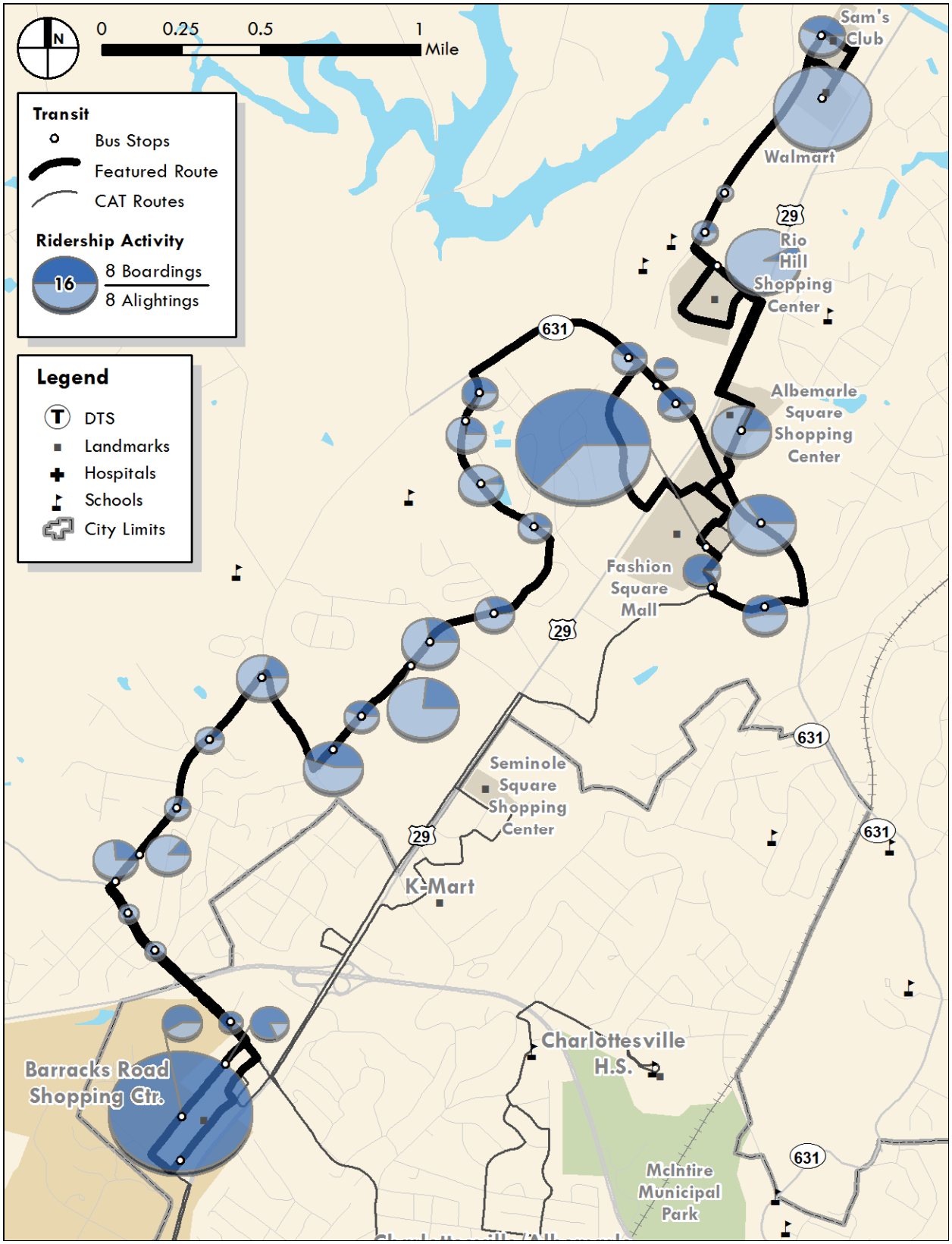
- Ridership on Route 5 is highest during the midday and afternoon hours in the northbound direction.
- The maximum southbound load was 16 passengers and occurred during the midday hours. The maximum northbound load was 20 passengers and occurred during the afternoon hours. The lowest maximum loads were observed in the northbound direction during the morning hours.
- The 4:15 p.m. northbound trip carried the most passengers followed by the 4:45 and 6:15 p.m. trips. The 2:30 p.m. southbound trip recorded the fewest passengers.
- The Fashion Square Mall is the highest volume stop on Route 5 followed by Barracks Road Shopping Center. The stop at Walmart was also well utilized. The Berkmar Drive segment across from the mall saw relatively few boardings or alightings.
- On-time performance was met 83% of the time throughout the day. On-time performance during the afternoon periods was the poorest.


Weekday Boardings by Time of Day
Boardings
35
30
25
20
15
10
5
0
Southbound
Northbound
6:15AM
7:00AM
7:30AM
8:00AM
8:30AM
9:00AM
9:30AM
10:00AM
10:30AM
11:00AM
11:30AM
12:00PM
12:30PM
1:00PM
1:30PM
2:00PM
2:30PM
3:00PM
3:30PM
4:00PM
4:30PM
5:00PM
5:30PM
6:00PM
6:30PM
7:00PM
7:30PM
8:00PM
8:30PM
9:00PM
9:30PM
10:15PM
Start of Trip

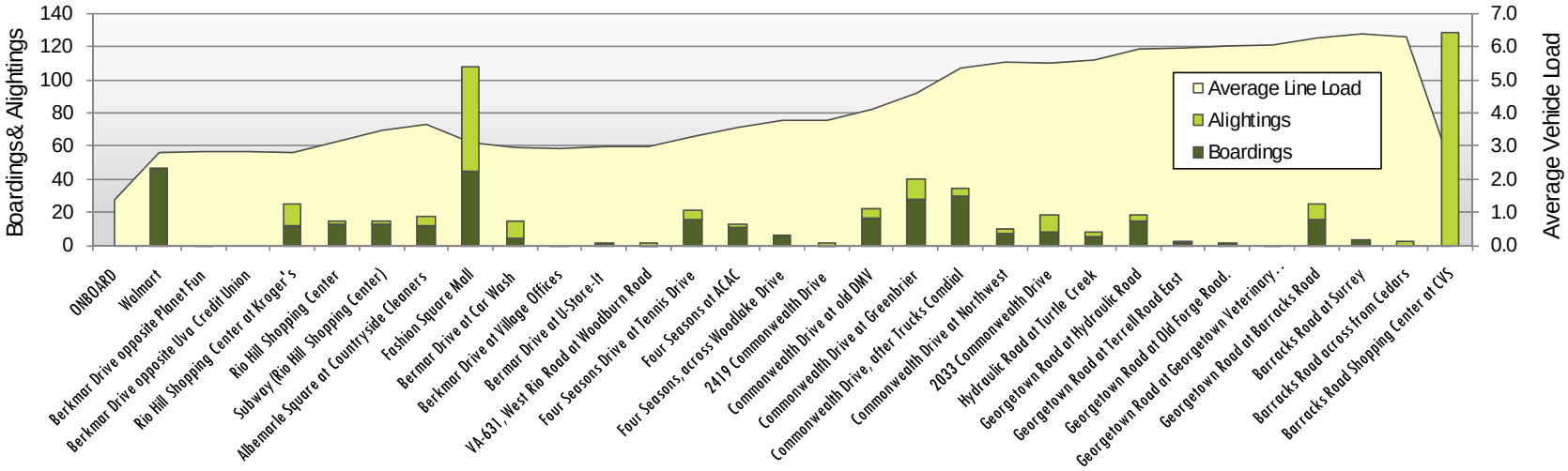
Weekday Ridership Activity (Southbound)



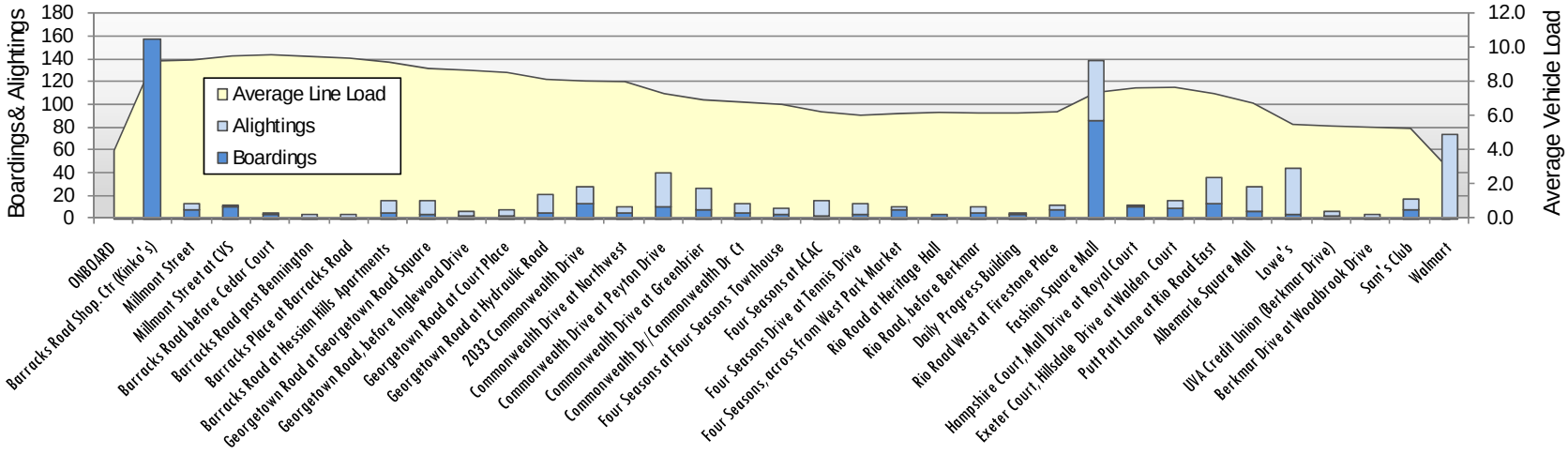
Weekday Ridership Activity (Northbound)



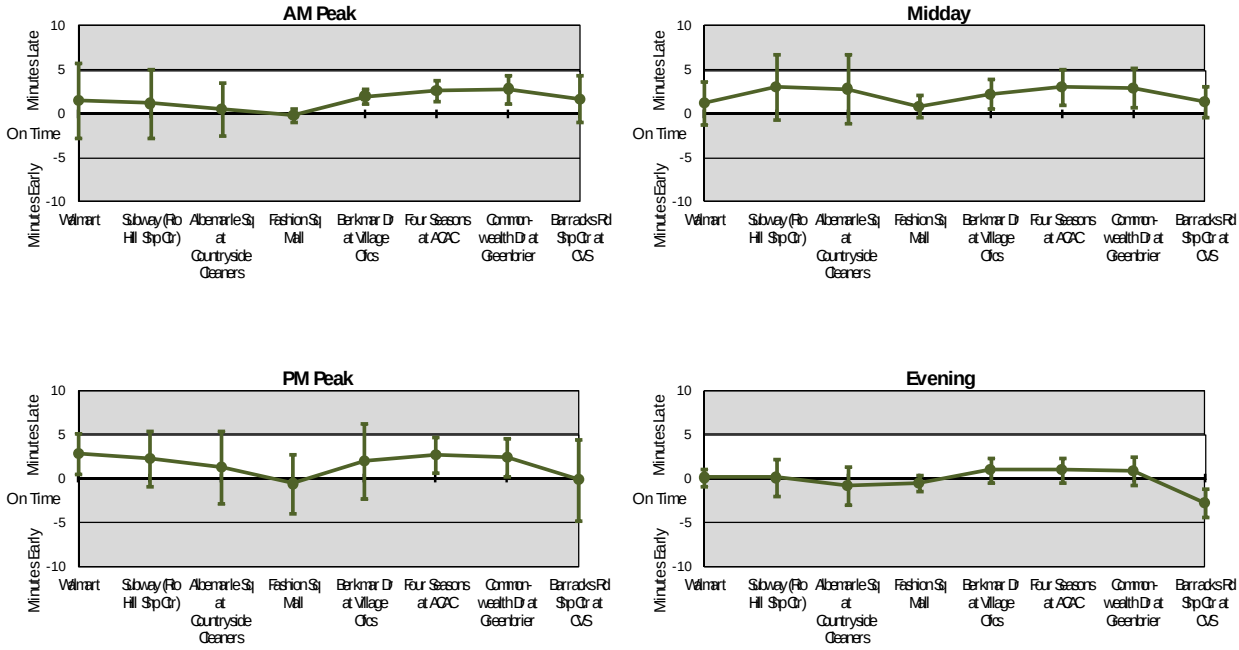
Southbound Weekday Ridership by Stop and Average Line Loads


Boardings& Alightings
Average Vehicle Load
Average Line Load
Alightings
Boardings
ONBOARD
Walmart
Berkmar Drive opposite Planet Fun
Berkmar Drive opposite Uva Credit Union
Rio Hill Shopping Center at Kroger's
Rio Hill Shopping Center
Subway (Rio Hill Shopping Center)
Albemarle Square at Countryside Cleaners
Fashion Square Mall
Bermar Drive at Car Wash
Berkmar Drive at Village Offices
Bermar Drive at U-Store-It
VA-631, West Rio Road at Woodburn Road
Four Seasons Drive at Tennis Drive
Four Seasons at ACAC
Four Seasons, across Woodlake Drive
2419 Commonwealth Drive
Commonwealth Drive at old DMV
Commonwealth Drive at Greenbrier
Commonwealth Drive, after Trucks Comdial
Commonwealth Drive at Northwest
2033 Commonwealth Drive
Hydraulic Road at Turtle Creek
Georgetown Road at Hydraulic Road
Georgetown Road at Terrell Road East
Georgetown Road at Old Forge Road.
Georgetown Road at Georgetown Veterinary...
Georgetown Road at Barracks Road
Barracks Road at Surrey
Barracks Road across from Cedars
Barracks Road Shopping Center at CVS

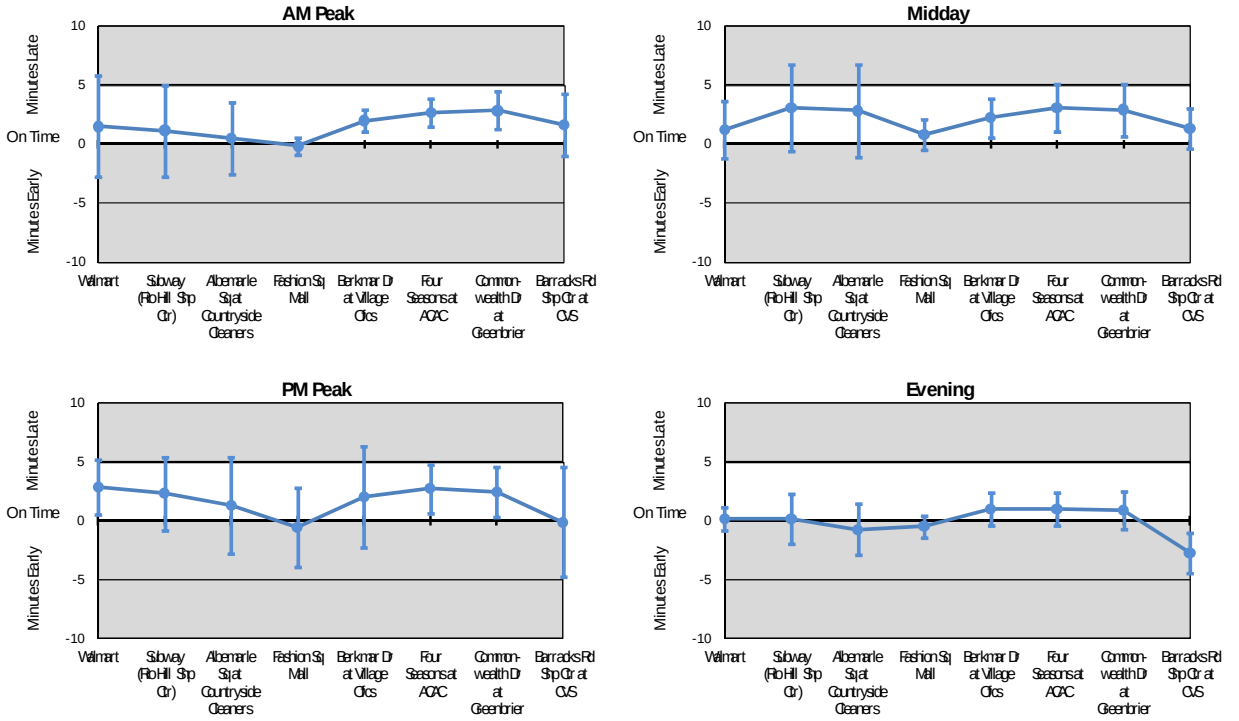
Northbound Weekday Ridership by Stop and Average Line Loads


Boardings& Alightings
Average Vehicle Load
Average Line Load
Alightings
Boardings
ONBOARD
Barracks Road Shop. Ctr (Kinko's)
Millmont Street
Millmont Street at CVS
Barracks Road before Cedar Court
Barracks Road past Bennington
Barracks Place at Barracks Road
Barracks Road at Hessian Hills Apartments
Georgetown Road at Georgetown Road Square
Georgetown Road, before Inglewood Drive
Georgetown Road at Court Place
Georgetown Road at Hydraulic Road
2033 Commonwealth Drive
Commonwealth Drive at Northwest
Commonwealth Drive at Peyton Drive
Commonwealth Drive at Greenbrier
Commonwealth Dr/Commonwealth Dr Ct
Four Seasons at Four Seasons Townhouse
Four Seasons at ACAC
Four Seasons Drive at Tennis Drive
Four Seasons, across from West Park Market
Rio Road at Heritage Hall
Rio Road, before Berkmar
Daily Progress Building
Rio Road West at Firestone Place
Fashion Square Mall
Hampshire Court, Mall Drive at Royal Court
Exeter Court, Hillsdale Drive at Walden Court
Putt Putt Lane at Rio Road East
Albemarle Square Mall
Lowe's
UVA Credit Union (Berkmar Drive)
Berkmar Drive at Woodbrook Drive
Sam's Club
Walmart

Weekday On Time Performance by Period (Southbound)



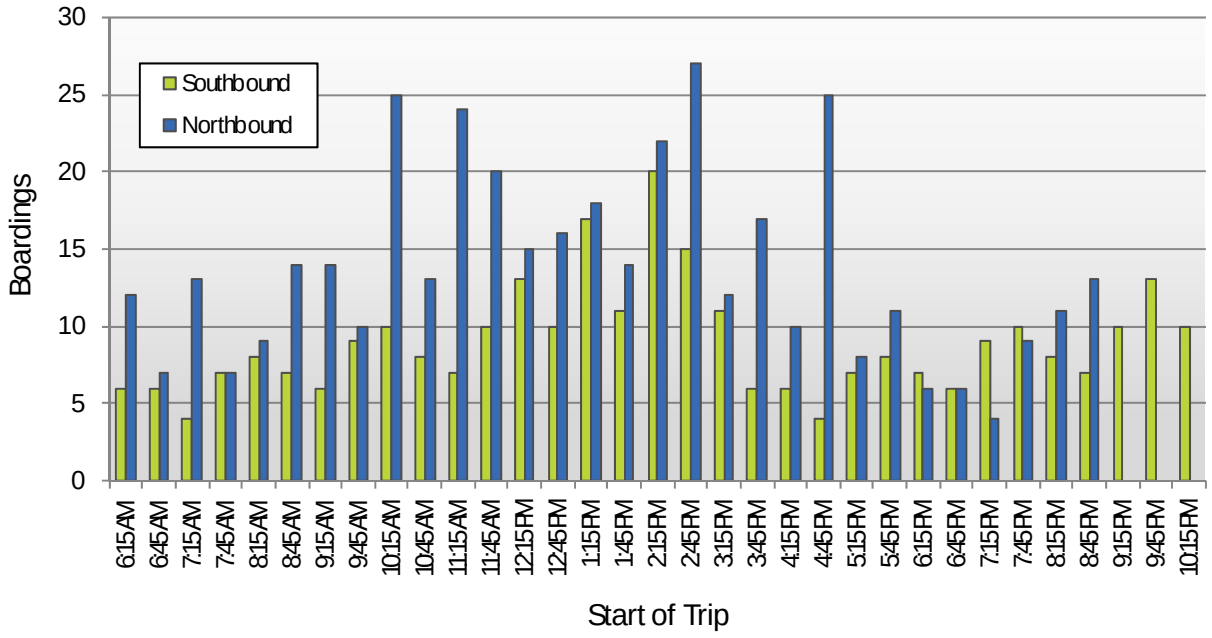
Weekday On Time Performance by Period (Northbound)



Saturday Observations

- The busiest trips of the day occur during the midday hours.
- Saturday trips carry 90% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 25 in the northbound direction and 17 in the southbound direction.
- Saturday trips were on-time 75-76% of the time. Trips during the midday hours were both late and early. However, evening trips were consistently early.

Saturday Boardings by Time of Day

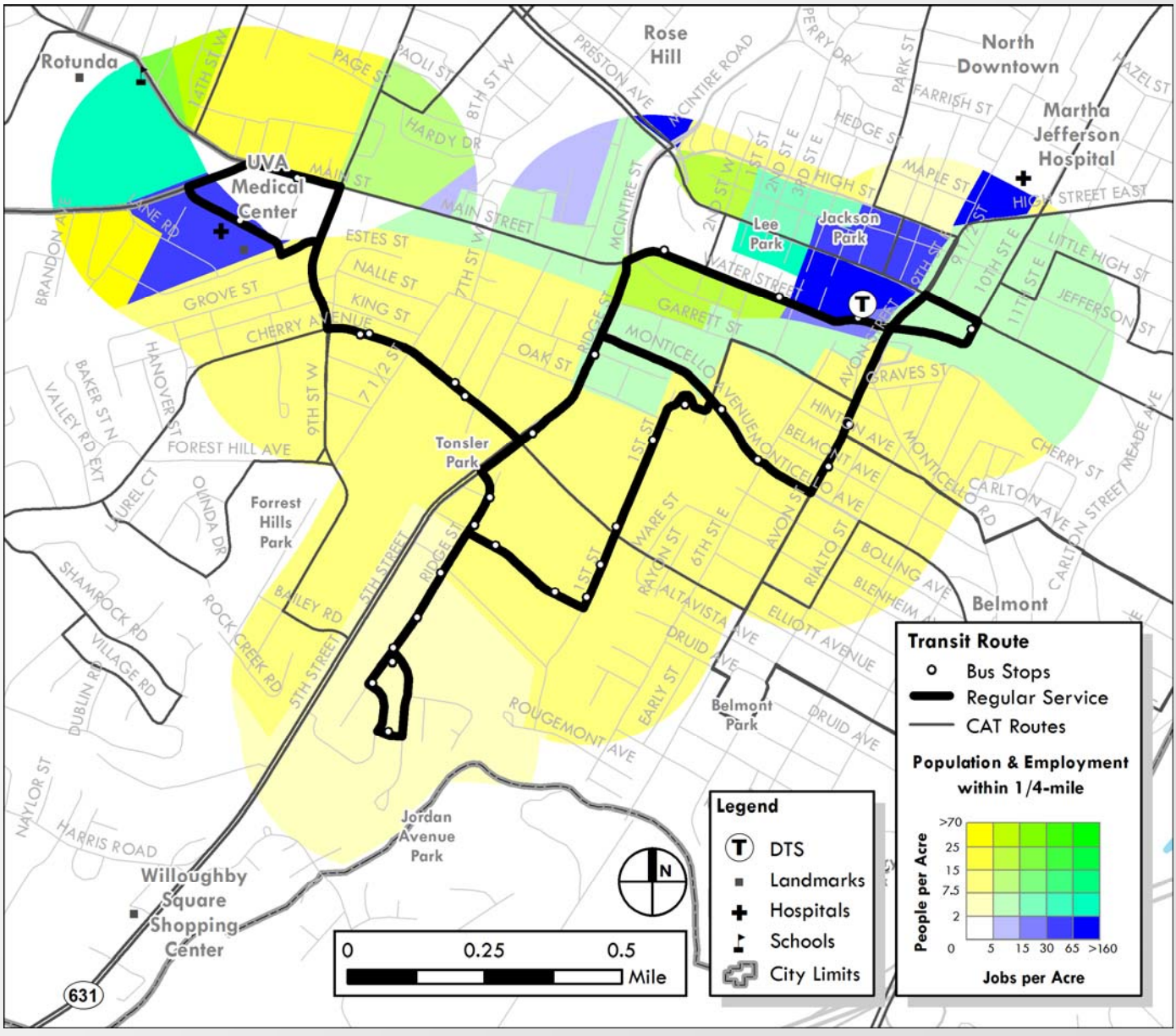


Charlottesville Area Transit – Route 6 – Ridge, UVA & Downtown

Route 6 operates as a one-direction circulator route serving the southwestern portions of Charlottesville including the University of Virginia Medical Center. Route 6 also provides circulation along the southern perimeter of the pedestrian mall on its outbound trip via Water Street, Ridge Street and Monticello Avenue.

Of the 17 routes in the CAT system, Route 6 ranks above-average in weekday performance and average on Saturdays.

Route 6	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 a.m. - 6:45 p.m.		6:45 a.m. - 6:15 p.m.	
Frequency (Pk-Mid-Eve)	30-60-n/a		60-60-n/a	
Cycle Time (min)	30		30	
Layover Time (min)	0		0	
Route Statistics				
Round Trips	19		12	
Daily Revenue-Hours	9.5		6	
Daily Revenue-Miles	114		72	
Peak Buses	1.0		0.5	
Route Productivity				
Boardings (Rank)	207	(8)	93	(9)
Riders/Rev.-Hr. (Rank)	21.8	(6)	15.5	(7)
Riders/Rev.-Mi. (Rank)	1.8	(4)	1.3	(7)
Riders/Trip (Rank)	10.9	(11)	7.8	(9)



Description of Existing Alignment

Route 6 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route turns south on 2nd Avenue and serves Crescent Hall before continuing south on 1st Avenue. At Lankford Avenue, Route 6 turns right and then left on Ridge Street. Route 6 follows Ridge Street south to Raymond Road, turns left and then circles the block back around to Ridge Street via Brookwood Drive. Traveling north on Ridge Street, Route 6 then turns right on 5th Street and left on Cherry Avenue. At 9th Street, the route turns right and heads to UVA Medical Center via Roosevelt Brown Boulevard, Crispell Drive and Lee Street. After serving the hospital, Route 6 circles the block via Jefferson Park Avenue, West Main Street and Roosevelt Brown Boulevard, turning left on Cherry Avenue. From here, the route makes its way back to DTS via Ridge Street, Monticello Avenue, Avon Street, Market Street, 10th Street and Water Street.

Route 6 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused and UVA is more medically oriented in the area surrounding the hospital. There are also some smaller neighborhood-oriented businesses scattered along the Cherry Avenue portion of the alignment. Major destinations along Route 6 include:

- Piedmont Housing Alliance
- ACAC Fitness and Wellness
- Crescent Hall
- Blue Ridge Commons
- UVA Medical Center
- UVA Corner

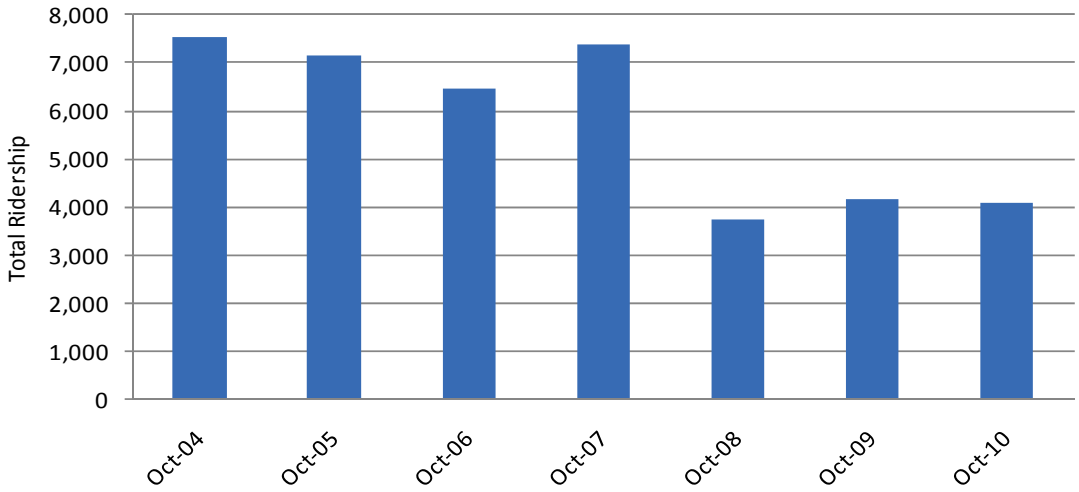
Key Route Issues and Observations

- *Alignment* – Route 6 is primarily comprised of a large one-way loop. Part of this alignment is forced by the placement of the DTS. However, the majority of the loop is designed to provide as much service coverage to as many people as possible. This one-way circulation forces passengers to ride the entire circuit should they require transit for both their departing and returning trip.
- *Stops* – Bus stops along Route 6 appear to be adequately spaced every two to three blocks through the downtown circulator alignment. Spacing is much more dense along the 1st Street, Lankford Avenue and Ridge Street segments. In contrast, stops are more widely spaced along the Cherry Avenue corridor.
- *Schedule/Span of Service* – Route 6 operates Monday through Saturday from 6:45 a.m. until 6:45 p.m. (the last scheduled trip departs DTS at 5:45 p.m.) at 60-minute frequency. On weekdays, an additional peak bus is provided which improves service frequency to 30 minutes from 7:15 a.m. until 9:45 a.m. and from 3:15 p.m. until 6:45 p.m. Night service along all much of Route 6's alignment is provided by Route 22. Sunday service is not offered.
- *Cycle/Layover Times* – Route 6 has a 35-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 3 at the DTS. There are 30 minutes of scheduled running time and five minutes of scheduled recovery time at the DTS prior to the next departure as Route 3.
- *Route Transfers* – Route 6 connects with all CAT routes (except Route 5) at the DTS. Route 6 also intersects with Routes 2B and 4 on 5th Street as well as Routes 4, 7 and the Trolley on West Main Street.

Historical Ridership Characteristics

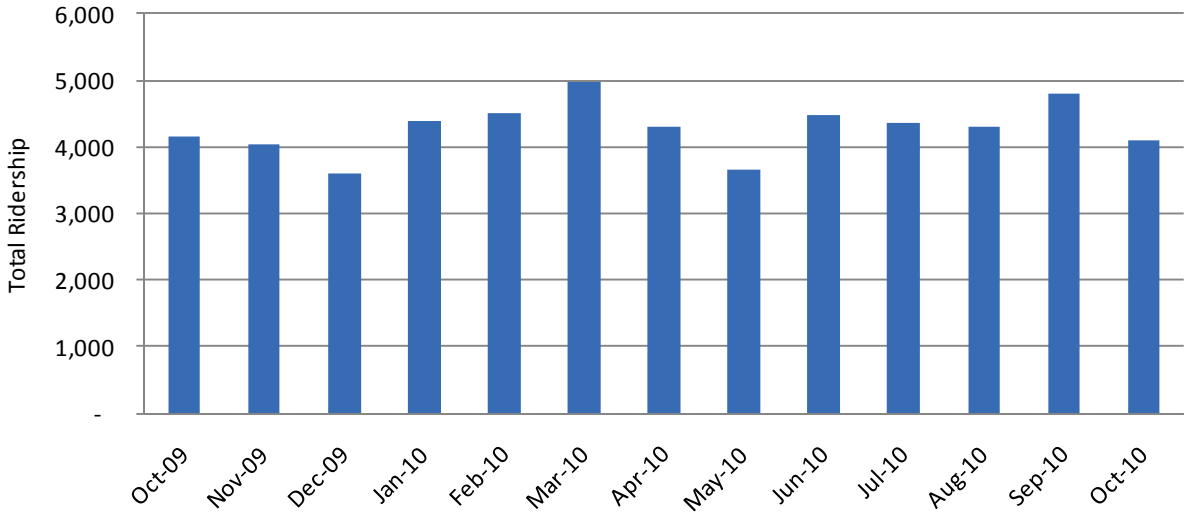
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 6 has experienced somewhat stable ridership up until 2008. In 2008, Segments of Route 6 (6B) were realigned to new Route 8; thus, there was a drop in ridership allocated to Route 6.

Year by Year October Ridership (2004 – 2010)



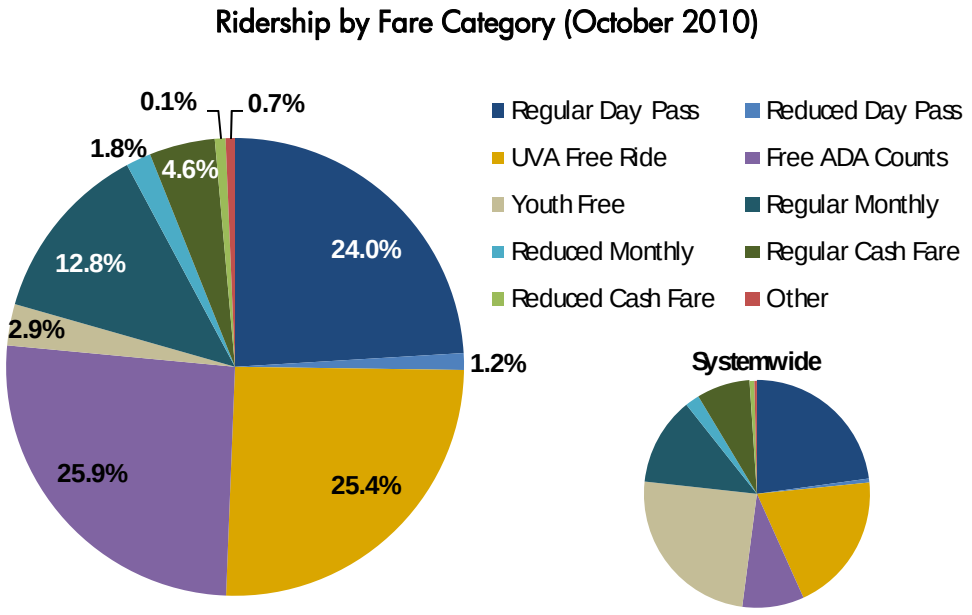
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Ridership appears to be lowest in December and May. The highest months are March and September.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Free ADA Riders generated the highest number of passengers (25.9%) followed closely by UVA Riders (25.4%) and then Regular-Fare Day Pass Riders (24%). Regular-Fare Monthly Pass Riders represented the next largest group (12.8%). Regular Cash Fare riders (4.6%) were marginally represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 6 are as follows:

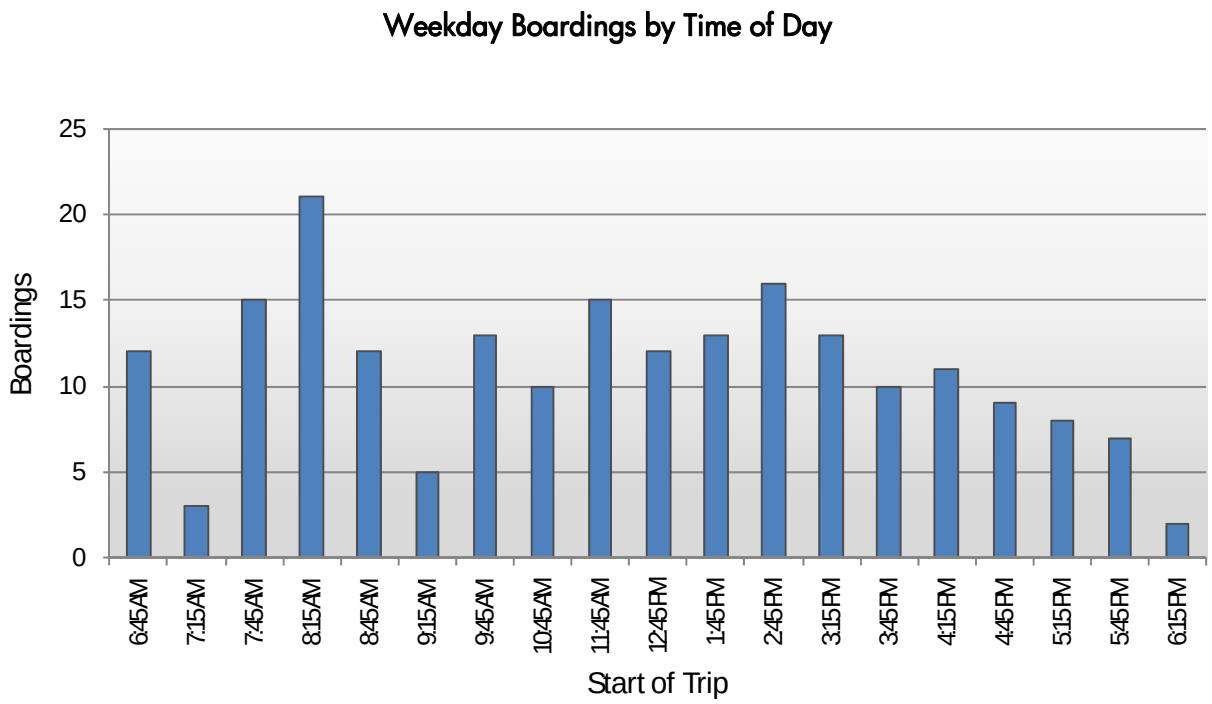
Route 6 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
63	84	60	n/a	207	93	n/a
Maximum Load						
19	13	9	n/a	19	12	n/a
Timepoints Reached On Time						
93%	79%	86%	n/a	85%	64%	n/a

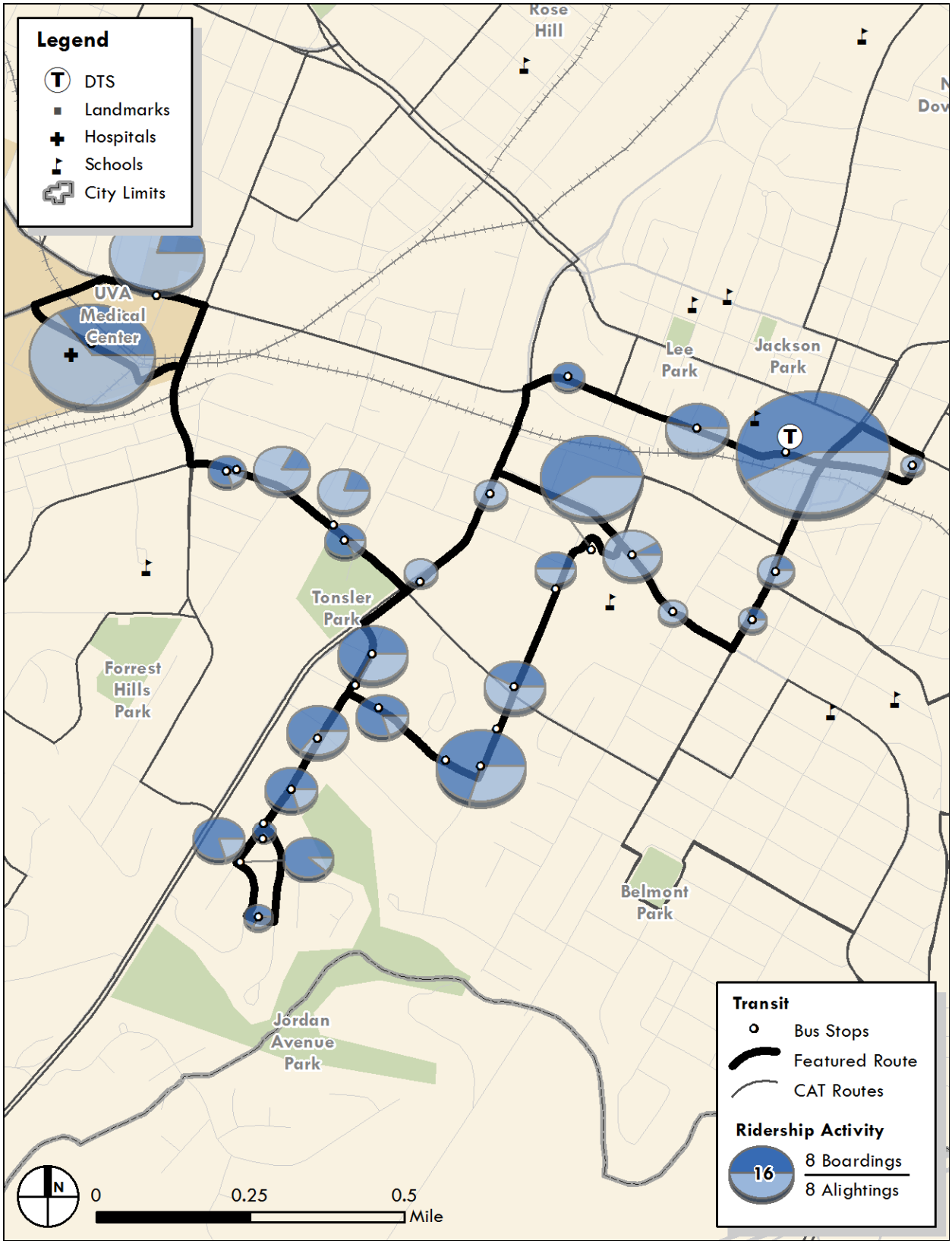
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

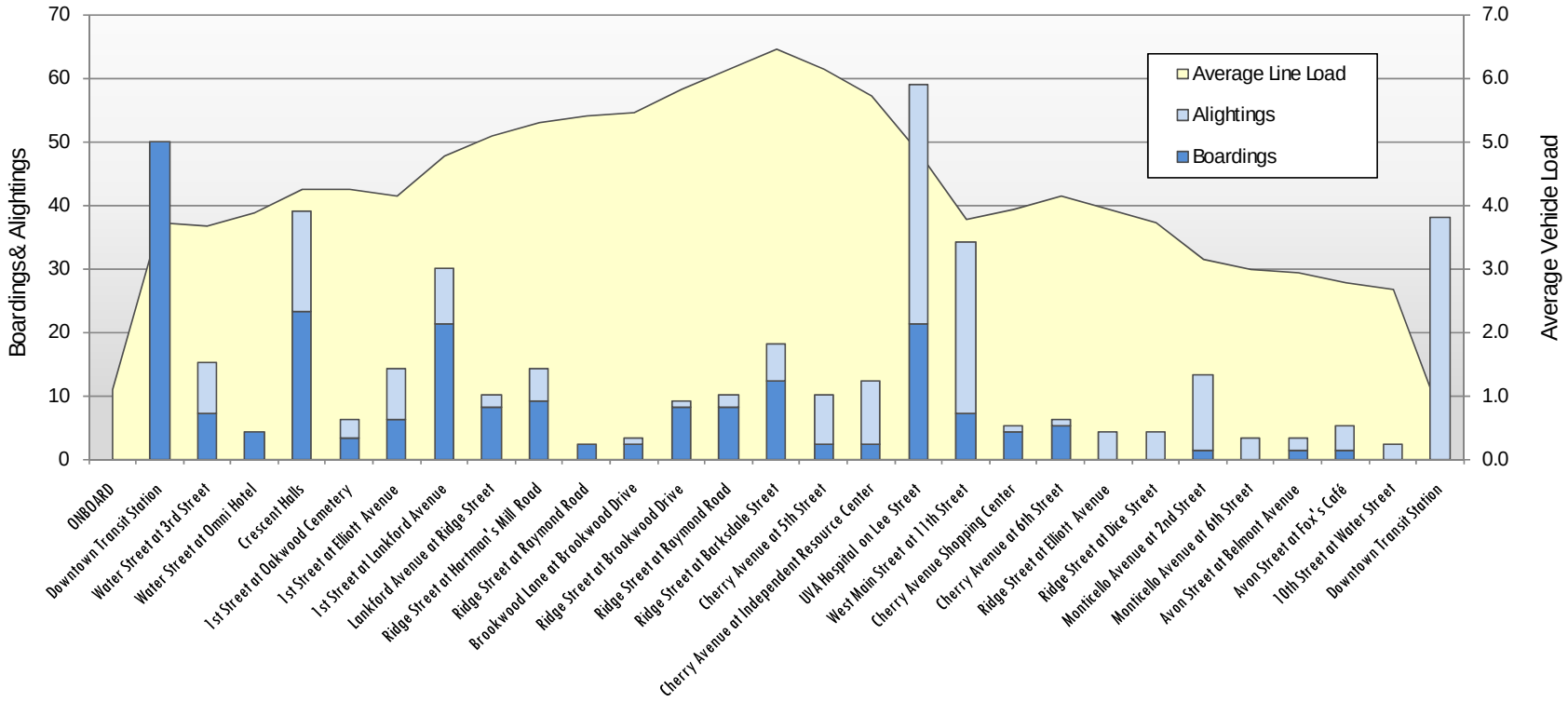
- Ridership on Route 6 is highest during the morning peak and midday hours.
- The maximum observed load was 19 passengers and occurred during the a.m. peak.
- The 7:15 a.m. trip carried the most passengers followed by the 2:45 p.m. trip. The 6:15 p.m. trip carried the fewest passengers.
- The DTS is the highest volume stop on Route 6. The stops at UVA Hospital, Crescent Halls and West Main Street were the next strongest.
- On-time performance was met 85% of the time. Buses were both early and late. However, late buses were more prevalent in the afternoon peak as the route reached its Monticello Avenue timepoint.


Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:45AM
7:15AM
7:45AM
8:15AM
8:45AM
9:15AM
9:45AM
10:45AM
11:45AM
12:45PM
1:45PM
2:45PM
3:15PM
3:45PM
4:15PM
4:45PM
5:15PM
5:45PM
6:15PM
Start of Trip

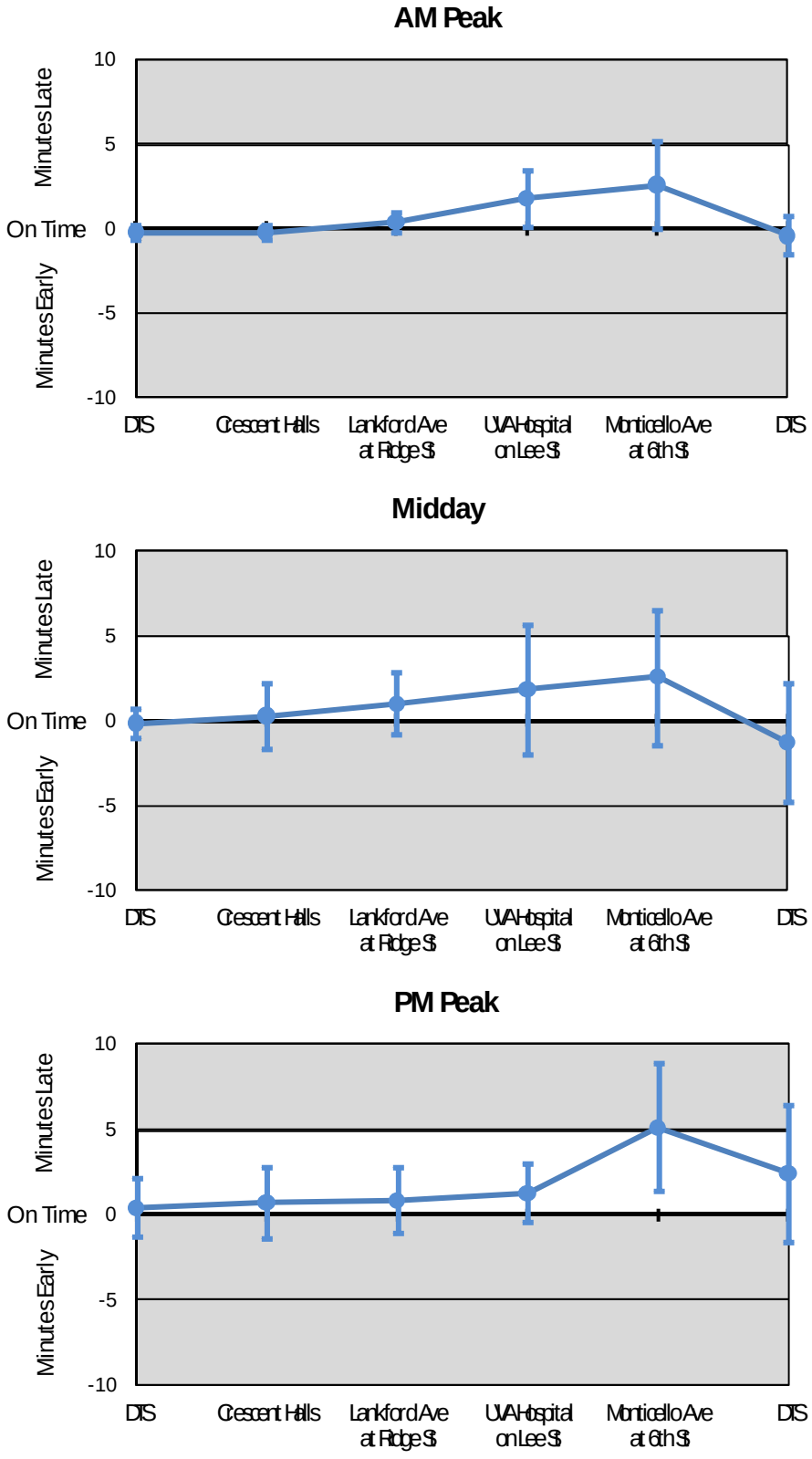
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads

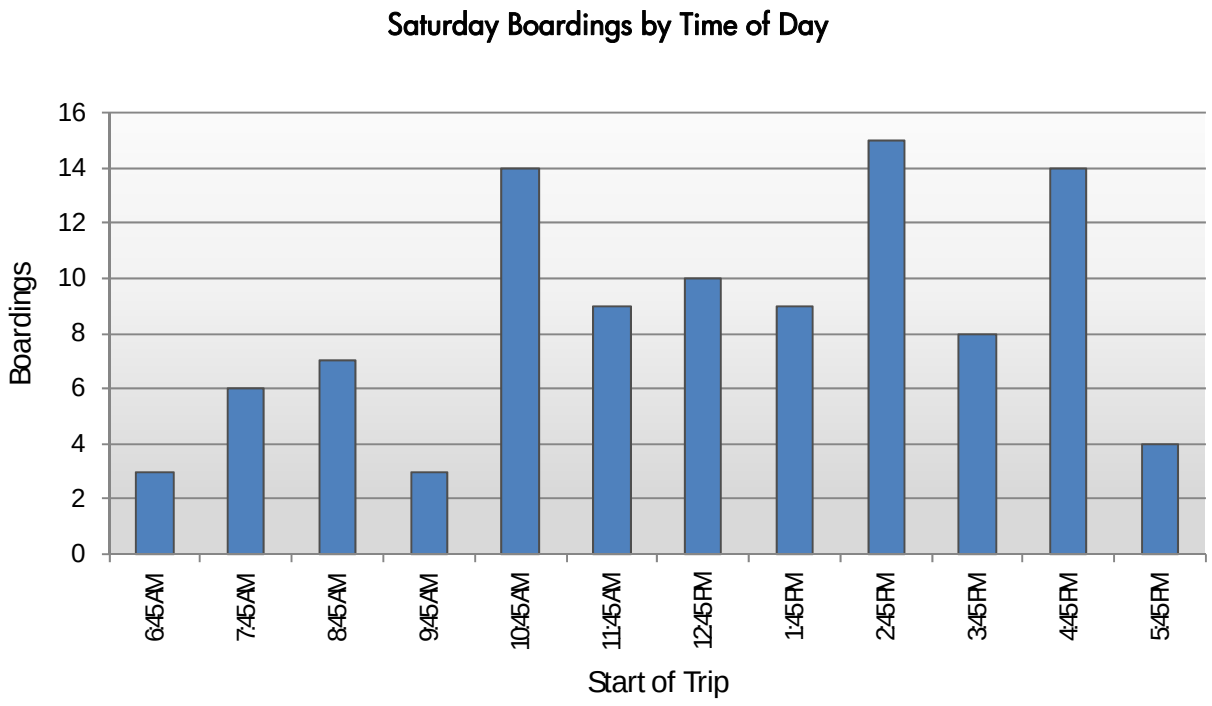


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the day was at 2:45 p.m. followed closely by 10:45 a.m. and 4:45 p.m. The 6:45 and 9:45 a.m. trips recorded the lowest number of riders.
- Saturday trips carry 45% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 12.
- Saturday trips were on-time 64% of the time. Late buses in the afternoon were especially problematic.

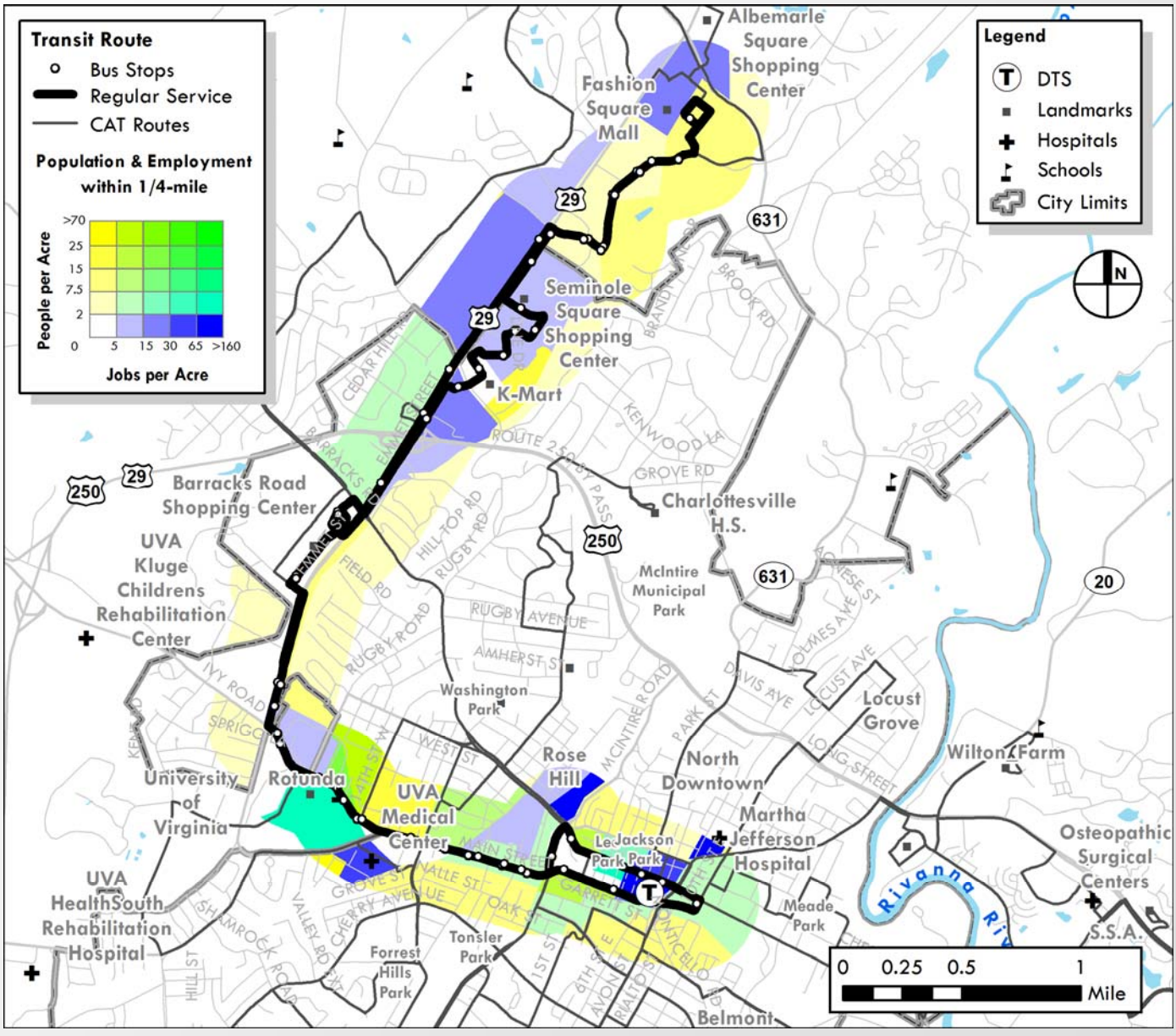


Charlottesville Area Transit – Route 7 – Downtown to Fashion Square Mall

Route 7 operates primarily as a linear route connecting downtown Charlottesville with the Fashion Square Mall via West Main Street and US 29. Route 7 also provides service to the University of Virginia and Barracks Road Shopping Center.

Of the 17 routes in the CAT system, Route 7 consistently performs in the upper quartile and is one of only two routes that operate on Sundays.

Route 7	Full Service Weekday		Saturday		Sunday	
Route Characteristics						
Hours of Operation	6:30 a.m. - 11:42 p.m.		6:30 a.m. - 11:42 p.m.		7:45 a.m. - 5:57 p.m.	
Frequency (Pk-Mid-Eve)	15-15-30		15-15-30		30-30-n/a	
Cycle Time (min)	30		30		30	
Layover Time (min)	3		3		3	
Route Statistics						
Round Trips	114		114		38	
Daily Revenue-Hours	66.3		66.3		19.8	
Daily Revenue-Miles	752.4		752.4		250.8	
Peak Buses	3		3		1	
Route Productivity						
Boardings (Rank)	2,444	(2)	2,011	(2)	649	(2)
Riders/Rev.-Hr. (Rank)	36.9	(2)	30.3	(2)	32.8	(2)
Riders/Rev.-Mi. (Rank)	3.2	(2)	2.7	(3)	2.6	(2)
Riders/Trip (Rank)	21.4	(2)	17.6	(3)	17.1	(2)



Description of Existing Alignment

Route 7 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Main Street and continues to the UVA campus. At Emmett Street (US 29), the route turns right and serves Barracks Road Shopping Center. After navigating through the shopping center, the bus exits at Barracks Road and returns northbound on Emmett Street. After passing the US 250 Bypass, Route 7 turns right into the Kroger and crosses Hydraulic Road to serve the K-Mart. The bus then exits onto India Road, Line Drive, Zan Road into the Seminole Square Shopping Center. After serving Marshalls, the route returns to US 29 via Seminole Court and continues north. At Greenbrier Drive, Route 7 turns right and then left on Hillsdale Drive until reaching the back side of the Fashion Square Mall where the route terminates. On the inbound trip, Route 7 does not make the deviation into Kroger and Seminole Square Shopping Center. Instead, the bus continues south on US 29. When approaching downtown, Route 7 returns to the DTS via Ridge-McIntyre Road, Market Street, 10th Street and Water Street.

Route 7 primarily serves commercial and retail interests as well as the UVA throughout the length of its route. Apartments were prevalent along the Hillsdale Drive segment of the route. Given Route 7's proximity to UVA, it is popular with college students. Major destinations along Route 7 include:

- Amtrak Station
- Federal Courthouse
- West Main Street
- University of Virginia
- Barracks Road Shopping Center
- Emmett Street Kroger
- K-Mart
- Seminole Square Shopping Center
- Jefferson Area Board for Aging (JABA)
- Fashion Square Mall
- Best Buy
- Charlottesville City Hall

Key Route Issues and Observations

- *Alignment* – Route 7 is primarily linear and bi-directional. However, there are limited segments and stops that only receive service in one direction. Travel within Barracks Road Shopping Center was observed to be congested with pedestrian and automobile traffic, making it challenging for transit buses to navigate. This problem is only exacerbated during peak shopping periods.
- *Stops* – Bus stops along Route 7 are consistently spaced as demand dictates. One exception is along US 29 where stops are more limited due to the high traffic volumes and a lack of safe stopping locations. As such, buses have been routed to deviate into shopping centers.
- *Schedule/Span of Service* – Route 7 operates Monday through Saturday from 6:30 a.m. until 11:42 p.m. (the last scheduled trip departs Fashion Square at 11:15 p.m.) at 15-minute frequency. After 6:15 p.m., service frequency is reduced to 30 minutes. Sunday service is also offered at 30-minute frequency from 7:45 a.m. until 5:57 p.m. (last trip departs DTS at 5:15 p.m.).
- *Cycle/Layover Times* – Route 7 is one of only two routes that have variable running times. On Monday-Saturday until 10:30 a.m., Route 7 has a 60-minute cycle time and requires four buses to operate at 15-minute frequency. There are 54 minutes of scheduled running time with three minutes of scheduled recovery time at Fashion Square Mall and another three minutes of scheduled recovery time at DTS. After 10:30 a.m. another two buses are added, allowing for a 90-minute cycle time. On this schedule there are 84 minutes of scheduled running time. Scheduled recovery time remains the same as in the previous schedule. After 6:15 p.m. when frequency is reduced to 30 minutes, running times are also reduced back to the morning allocation (60-minute round trip

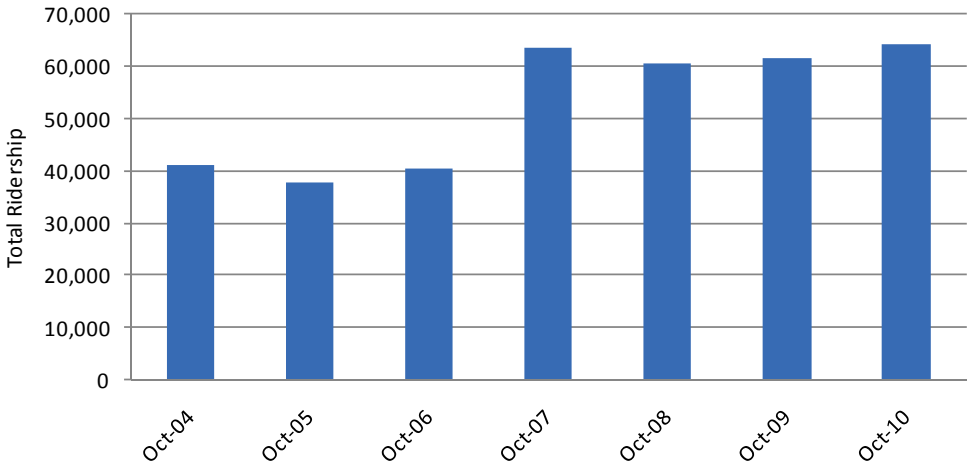
cycle). Sunday running times also operate on a 60-minute cycle until 12:15 p.m. After 12:15 p.m., each round trip is allocated 90 minutes.

- *Route Transfers* – Route 7 connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the perimeter of downtown. In addition, Route 7 also connects with Routes 5 and 8 as well as UTS at Barracks Road Shopping Center and again with Route 5 at the Fashion Square Mall.

Historical Ridership Characteristics

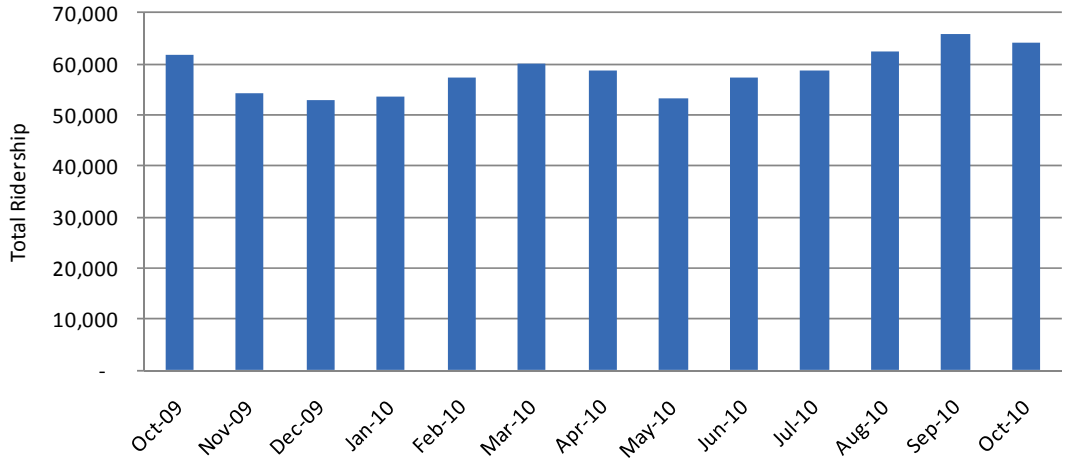
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 7 has been steady with the exception of an increase in 2007. This is likely attributed to the UVA pass partnership allowing students and staff to ride CAT by showing their ID.

Year by Year October Ridership (2004 – 2010)



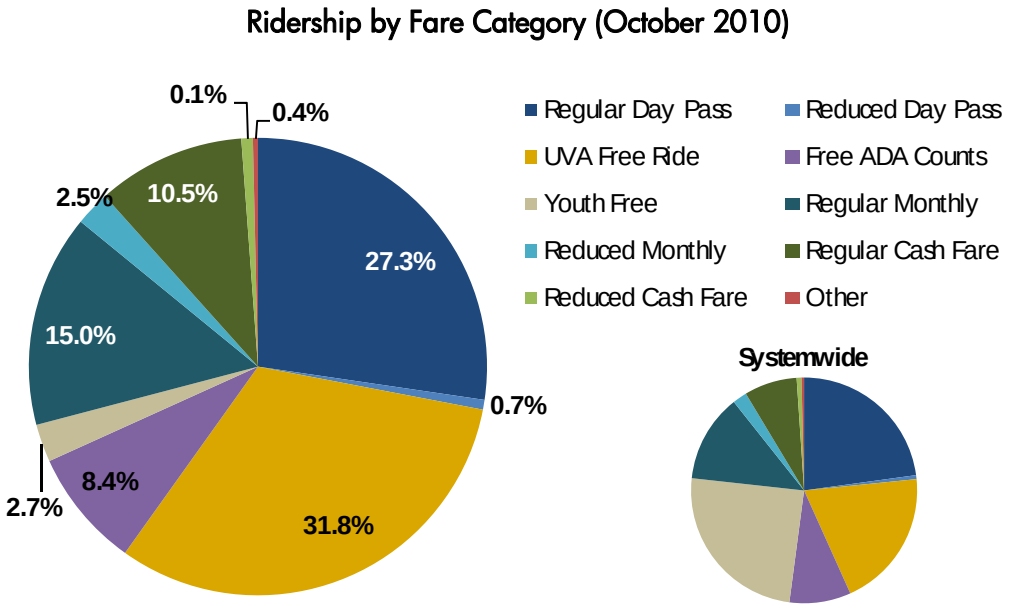
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. The fall and spring months show the highest ridership, which is likely attributed to student ridership and favorable weather.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. UVA riders generated the highest number of passengers (31.8%). These riders were much more prevalent than the systemwide average. Regular-Fare Day Passes represented the next largest group (27.3%). Regular-Fare Monthly Pass holders (15%) were the next largest group followed by Regular Cash Fares (10.5%).



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 7 are as follows:

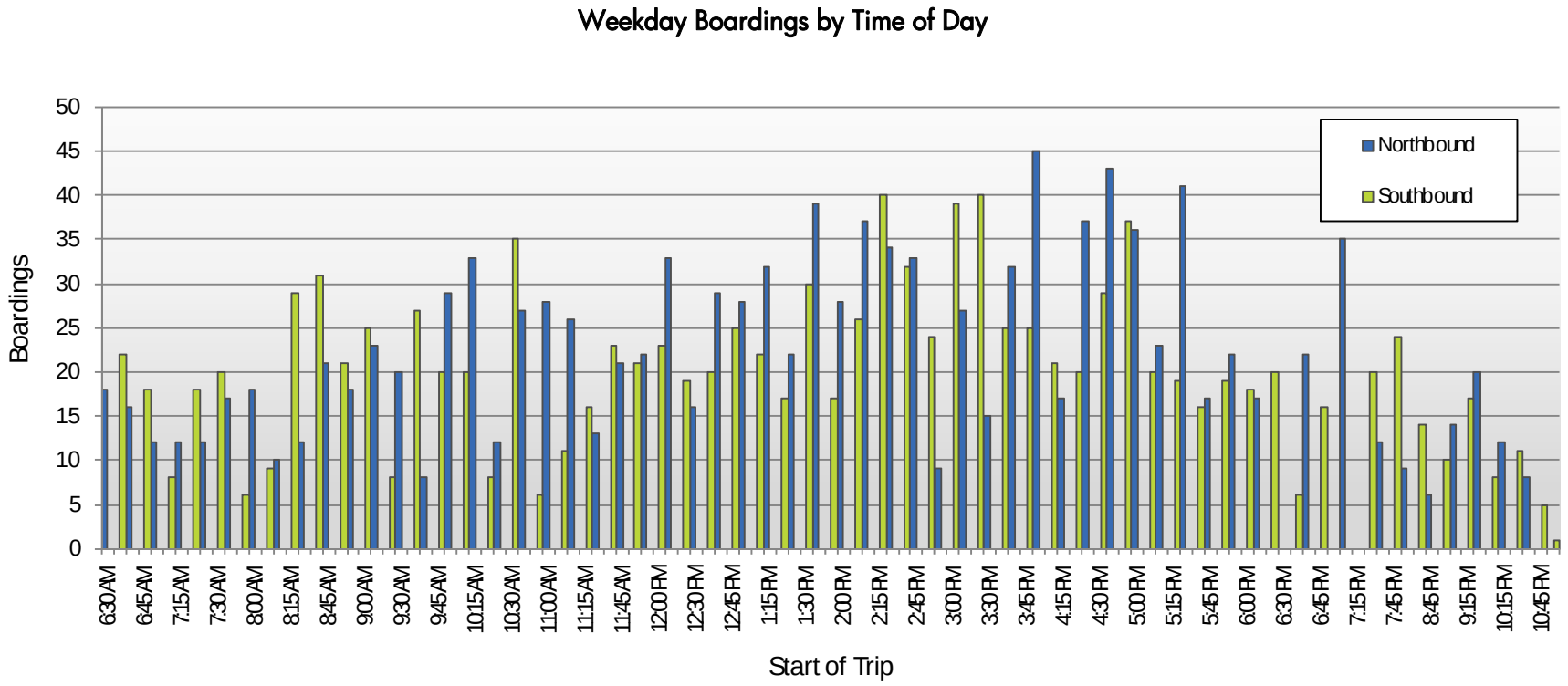
Route 7 Ridecheck Results Summary

	Weekday					Saturday	Sunday
	AM	MID	PM	EVE	Daily		
	Boardings						
NB	148	611	381	138	1,278	1,089	348
SB	182	515	348	132	1,177	856	309
	Maximum Load						
NB	16	27	37	29	37	34	24
SB	21	33	25	19	33	23	20
	Timepoints Reached On Time						
NB	86%	69%	74%	82%	75%	68%	81%
SB	74%	67%	70%	85%	72%	72%	85%

On time defined as between 1 minute early and 5 minutes late

Weekday Observations

- Ridership on Route 7 is highest during the midday hours. Afternoon peaks carried more riders than morning peaks.
- The maximum northbound load was 37 passengers and occurred during the afternoon hours. The maximum southbound load was 33 passengers and occurred during the midday hours. The lowest maximum loads were observed in the northbound direction during the morning hours.
- The northbound trips between 4:00 and 5:30 p.m. carried the most passengers. The southbound trips between 2:30 and 3:30 p.m. were also strong performers. The lowest trips of the day were scattered between better performing trips in the morning hours as well as the evening hours.
- Outside of the DTS, Barracks Road Shopping Center was the highest volume stop on Route 7. The Fashion Square Mall was the next highest. Stops around UVA were also well utilized.
- On-time performance was met 72-75% of the time throughout the day. In the northbound direction, morning trips and evening were typically late (when round trip cycles are 60 minutes). All other times of day also reported late buses. However, they would usually arrive at Fashion Square Mall early (when round trip cycles are 90 minutes). In the southbound direction, schedule variance was much greater. Morning peak and midday trips fell behind but also departed the Fashion Square Mall late. Midday and afternoon peak trips seem to be hit particularly badly in the last segment heading into downtown.


Weekday Boardings by Time of Day
Boardings
50
45
40
35
30
25
20
15
10
5
0
Northbound
Southbound
6:30 AM
6:45 AM
7:15 AM
7:30 AM
8:00 AM
8:15 AM
8:45 AM
9:00 AM
9:30 AM
9:45 AM
10:15 AM
10:30 AM
11:00 AM
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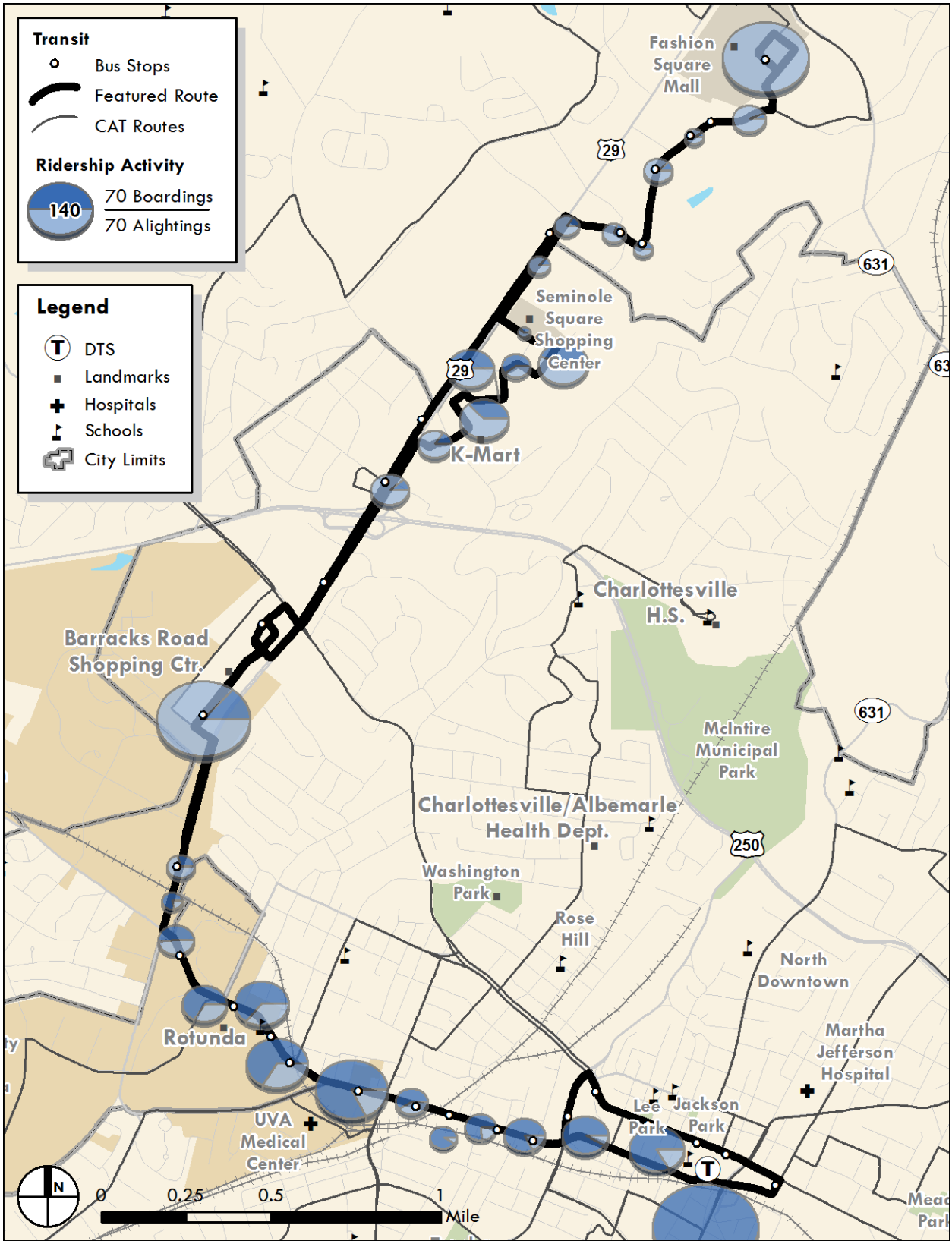
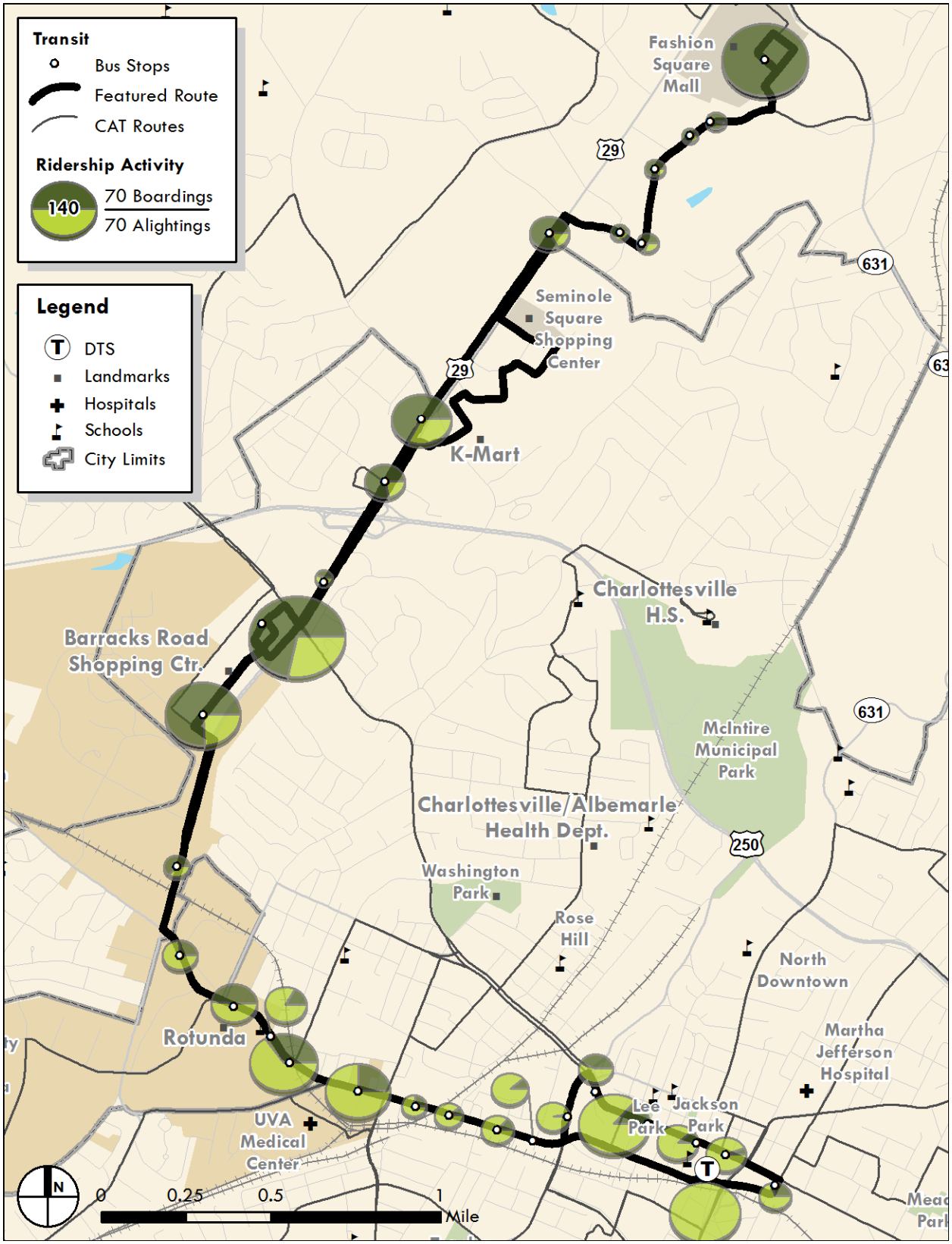
2:00 PM
2:15 PM
2:45 PM
3:00 PM
3:30 PM
3:45 PM
4:15 PM
4:30 PM
5:00 PM
5:15 PM
5:45 PM
6:00 PM
6:30 PM
6:45 PM
7:15 PM
7:45 PM
8:45 PM
9:15 PM
10:15 PM
10:45 PM
Start of Trip

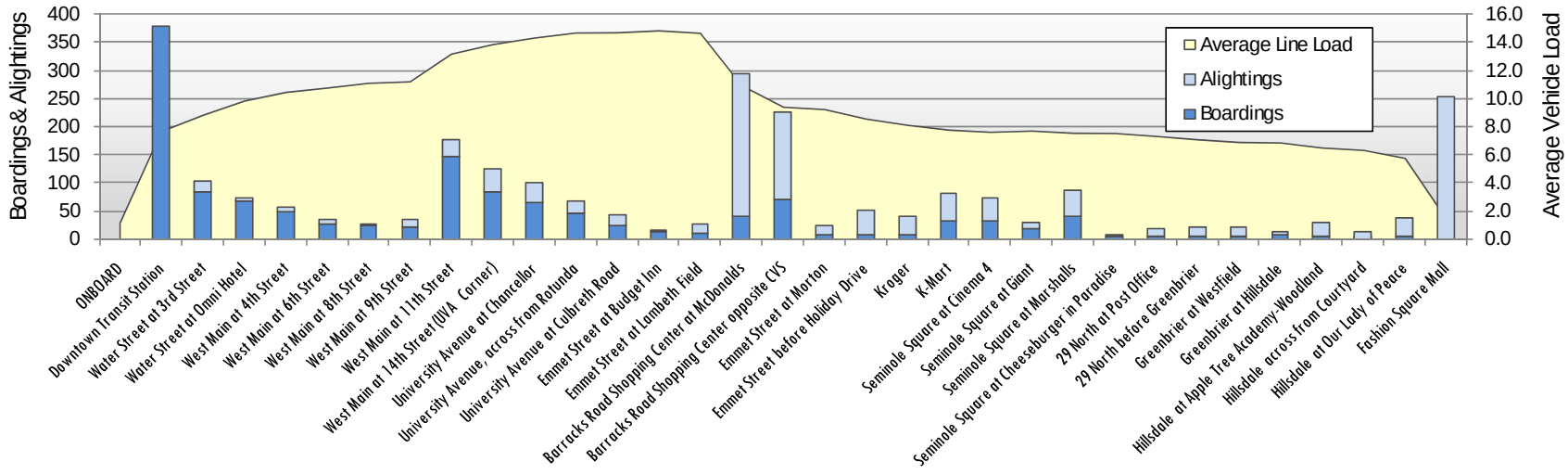
Weekday Ridership Activity (Northbound)



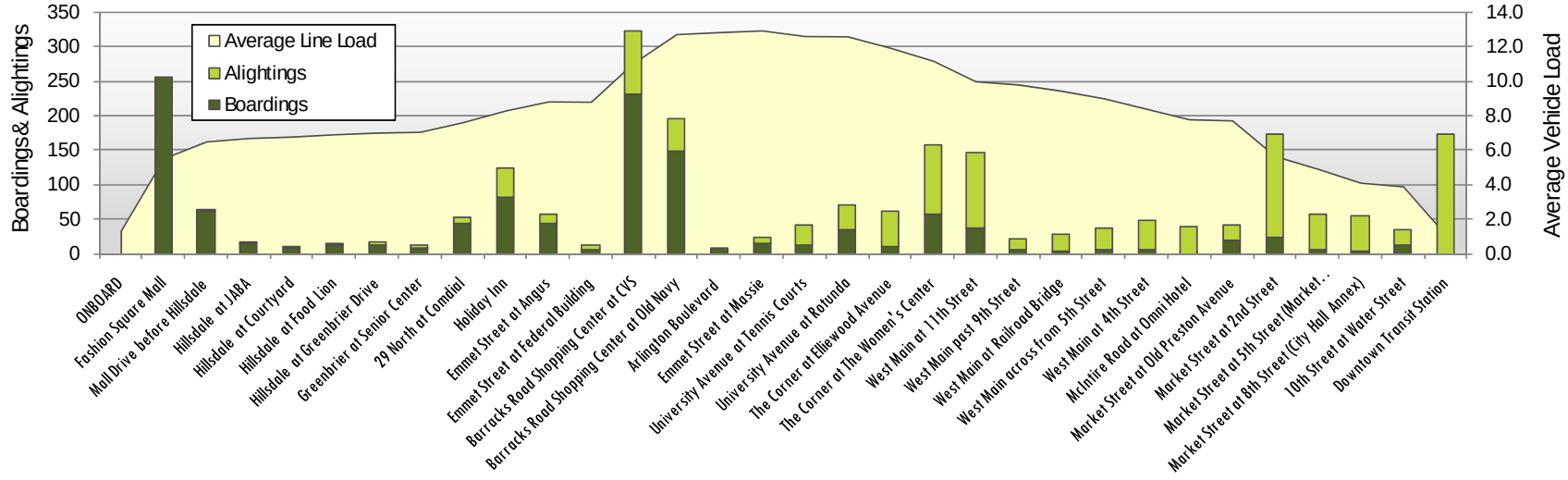
Weekday Ridership Activity (Southbound)



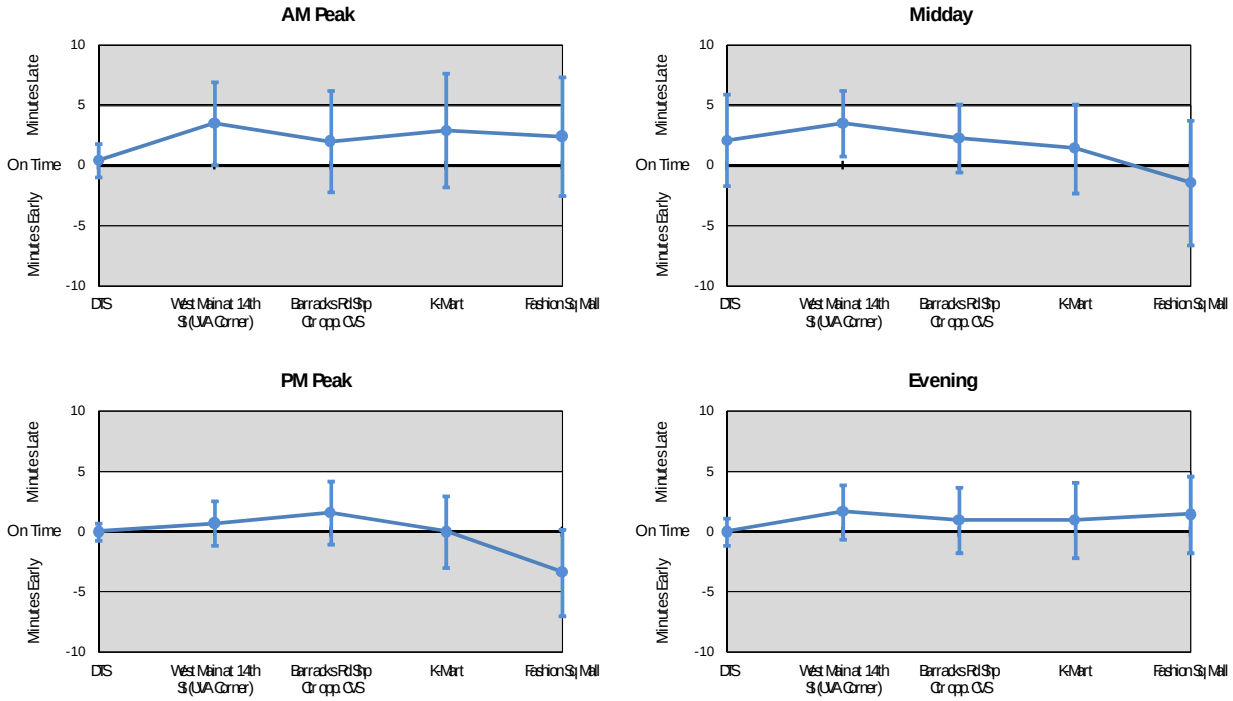
Northbound Weekday Ridership by Stop and Average Line Loads


Boardings& Alightings
Average Vehide Load
Average Line Load
Alightings
Boardings
ONBOARD
Downtown Transit Station
Water Street at 3rd Street
Water Street at Omni Hotel
West Main at 4th Street
West Main at 6th Street
West Main at 8th Street
West Main at 9th Street
West Main at 11th Street
West Main at 14th Street (UVA Corner)
University Avenue at Chancellor
University Avenue, across from Rotunda
University Avenue at Culbreth Road
Emmet Street at Budget Inn
Emmet Street at Lambeth Field
Barracks Road Shopping Center at McDonalds
Barracks Road Shopping Center opposite CVS
Emmet Street at Morton
Emmet Street before Holiday Drive
Kroger
K-Mart
Seminole Square at Cinema 4
Seminole Square at Giant
Seminole Square at Marshalls
Seminole Square at Cheeseburger in Paradise
29 North at Post Office
29 North before Greenbrier
Greenbrier at Westfield
Greenbrier at Hillsdale
Hillsdale at Apple Tree Academy-Woodland
Hillsdale across from Courtyard
Hillsdale at Our Lady of Peace
Fashion Square Mall

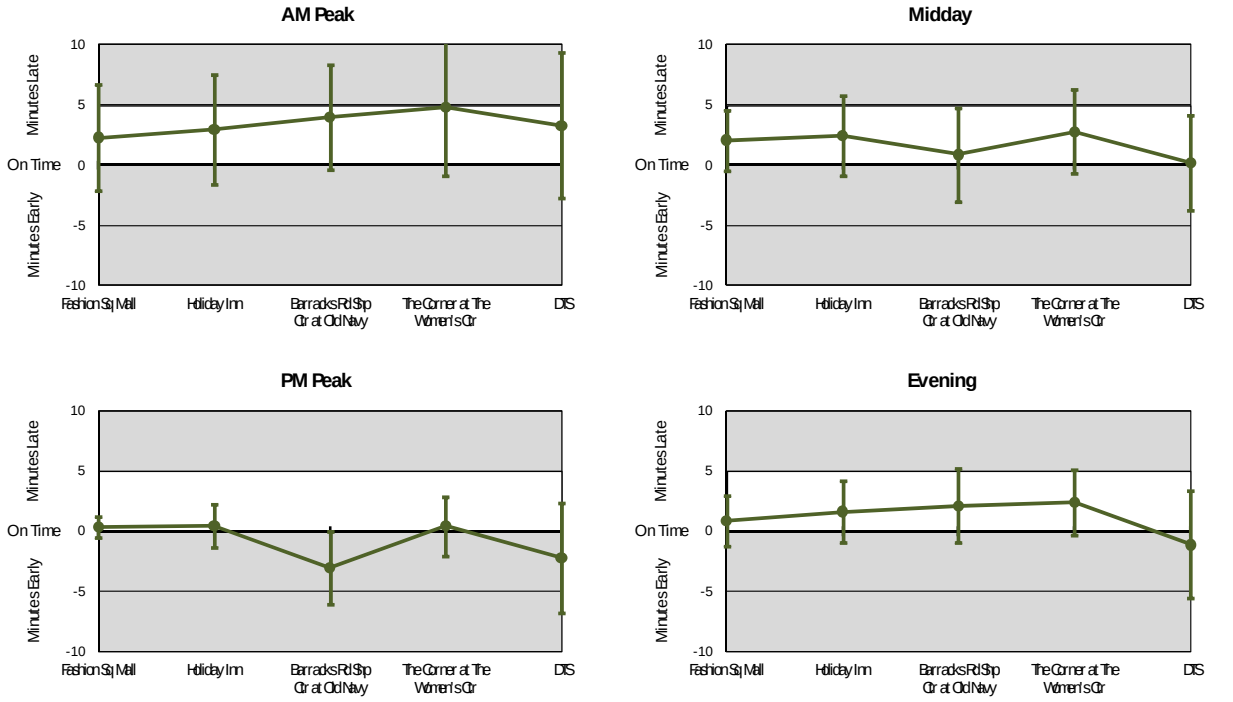
Southbound Weekday Ridership by Stop and Average Line Loads


Boardings& Alightings
Average Vehide Load
Average Line Load
Alightings
Boardings
ONBOARD
Fashion Square Mall
Mall Drive before Hillsdale
Hillsdale at JABA
Hillsdale at Courtyard
Hillsdale at Food Lion
Hillsdale at Greenbrier Drive
Greenbrier at Senior Center
29 North at Comdial
Holiday Inn
Emmet Street at Angus
Emmet Street at Federal Building
Barracks Road Shopping Center at CVS
Barracks Road Shopping Center at Old Navy
Arlington Boulevard
Emmet Street at Massie
University Avenue at Tennis Courts
University Avenue at Rotunda
The Corner at Ellewood Avenue
The Corner at The Women's Center
West Main at 11th Street
West Main past 9th Street
West Main at Railroad Bridge
West Main across from 5th Street
West Main at 4th Street
McIntire Road at Omni Hotel
Market Street at Old Preston Avenue
Market Street at 2nd Street
Market Street at 5th Street (Market...
Market Street at 8th Street (City Hall Annex)
10th Street at Water Street
Downtown Transit Station

Route 7 Northbound On Time Performance



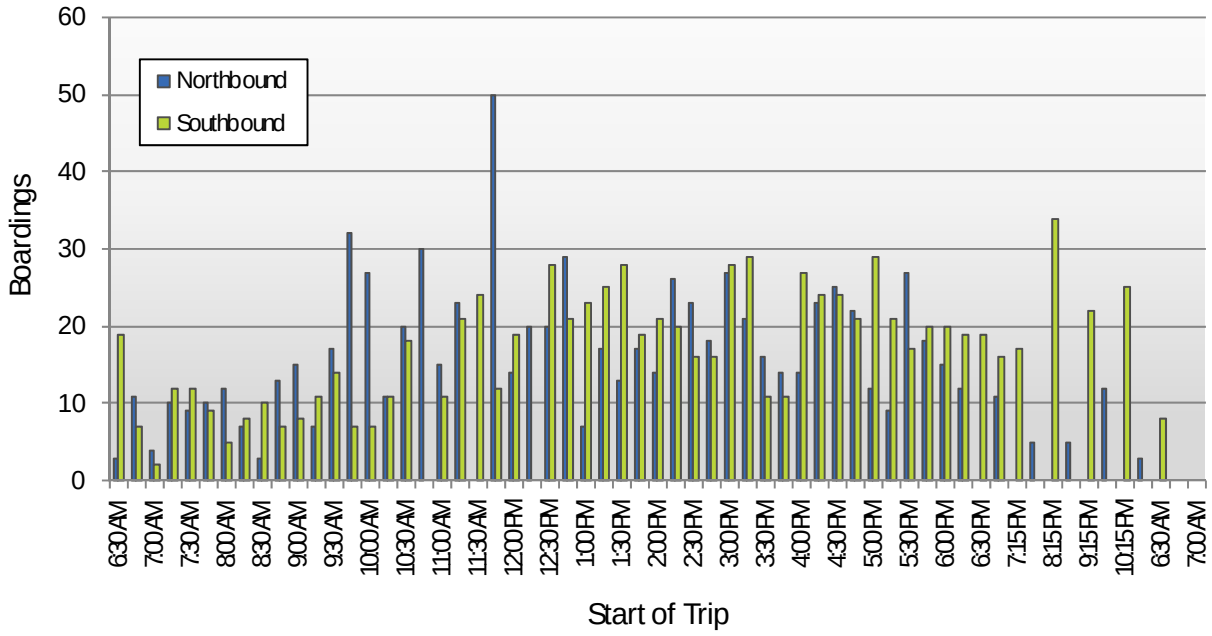
Route 7 Southbound On Time Performance



Saturday Observations

- The busiest trips of the day occur during the midday hours.
- Saturday trips carry 79% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 34 in the northbound direction and 23 in the southbound direction.
- Saturday trips were on-time 68-72% of the time. Trips throughout the day were both late and early. However, evening trips were consistently late.

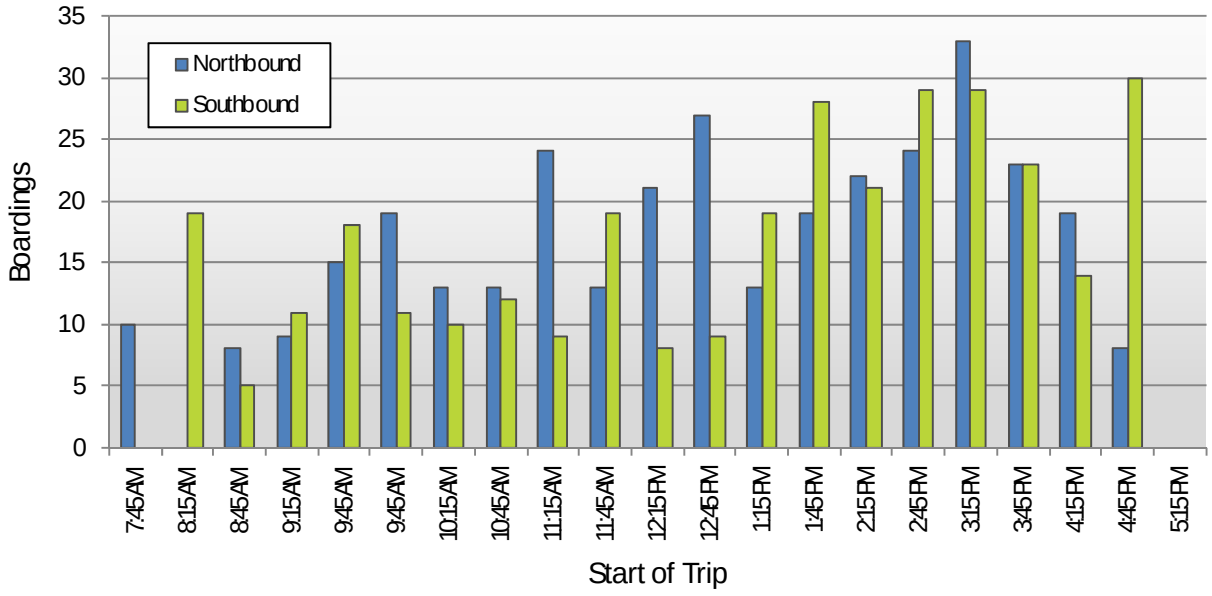
Saturday Boardings by Time of Day



Sunday Observations

- The busiest trips of the day occur during the afternoon hours.
- Sunday trips carry 27% of the ridership levels drawn on weekdays and 34% of the ridership levels drawn on Saturdays.
- The maximum load for Sunday trips was 24 in the northbound direction and 20 in the southbound direction.
- Sunday trips were on-time 81-85% of the time. Trips in the morning hours had the greatest on-time compliance.

Sunday Boardings by Time of Day

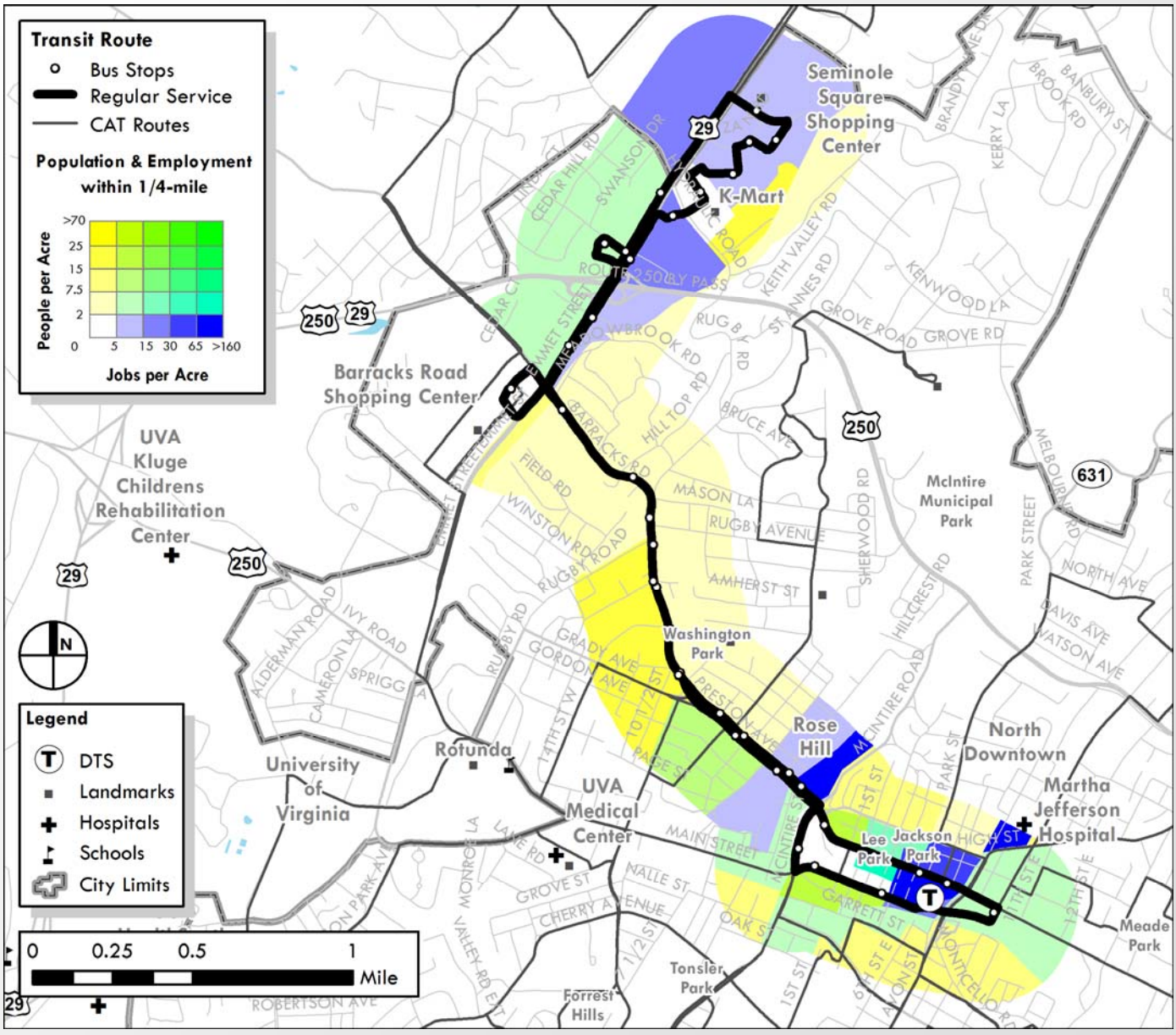


Charlottesville Area Transit – Route 8 – Seminole & Downtown

Route 8 operates primarily as a linear route connecting downtown Charlottesville with Seminole Square Shopping Center via the Preston Avenue and US 29 corridors. Route 8 also provides service to Barracks Road Shopping Center as well as the Rose Hill and Washington Park neighborhoods.

Of the 17 routes in the CAT system, Route 8 performs somewhat average on weekdays and Saturdays.

Route 8	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:30 a.m. - 6:55 p.m.		6:30 a.m. - 6:25 p.m.	
Frequency (Pk-Mid-Eve)	30-60-n/a		60-60-n/a	
Cycle Time (min)	60		60	
Layover Time (min)	18		18	
Route Statistics				
Round Trips	19		12	
Daily Revenue-Hours	19		12	
Daily Revenue-Miles	161.5		102	
Peak Buses	2.0		1.0	
Route Productivity				
Boardings (Rank)	274	(5)	163	(6)
Riders/Rev.-Hr. (Rank)	14.4	(11)	13.6	(8)
Riders/Rev.-Mi. (Rank)	1.7	(8)	1.6	(4)
Riders/Trip (Rank)	14.4	(5)	13.6	(4)



Description of Existing Alignment

Route 8 begins at the Downtown Transit Station (DTS) on Water Street and travels west to McIntyre Street where it continues north and then west on Preston Avenue and Barracks Road. At Emmett Street (US 29), the route turns left and then enters Barracks Road Shopping Center. After navigating through the shopping center, the bus exits at Barracks Road and returns northbound on Emmett Street. After passing the US 250 Bypass, Route 8 turns right into the Kroger and crosses Hydraulic Road to serve the K-Mart. The bus then exits onto India Road, Line Drive, Zan Road into the Seminole Square Shopping Center. After serving Marshalls, the route returns to US 29 via Seminole Court and returns south. Before reaching the US 250 Bypass, Route 8 deviates into the Best Buy and returns to Emmett Street via Angus Road and continues downtown in the reverse of the outbound routing. When approaching downtown, Route 8 returns to the DTS via Market Street, 10th Street and Water Street.

Route 8 primarily serves commercial and retail interests until reaching Washington Park. Here the route takes on more residential characteristics. Retail and commercial land uses resume upon reaching US 29. Major destinations along Route 8 include:

- Federal Courthouse
- Region Ten Community Services Board
- Washington Park
- Barracks Road Shopping Center
- Emmett Street Kroger
- K-Mart
- Seminole Square Shopping Center
- Best Buy
- Charlottesville City Hall

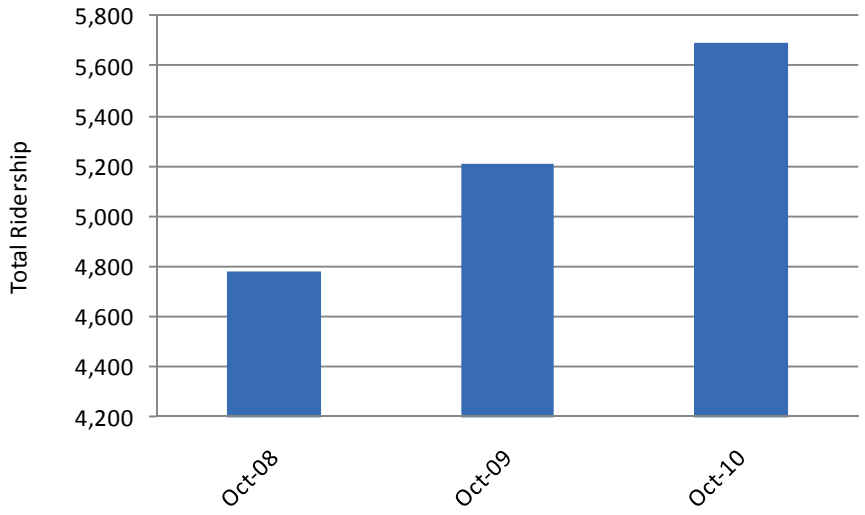
Key Route Issues and Observations

- *Alignment* – Route 8 is primarily linear and bi-directional. There are limited segments and stops that only receive service in one direction. However, this mostly occurs toward the end of the route, making it less problematic for riders. Travel within Barracks Road Shopping Center was observed to be congested with pedestrian and automobile traffic, making it challenging for transit buses to navigate. This problem is only exacerbated during peak shopping periods.
- *Stops* – Bus stops along Route 8 are consistently spaced as demand dictates. One exception is along US 29 where stops are more limited due to the high traffic volumes and a lack of safe stopping locations. As such, buses have been routed to deviate into shopping centers.
- *Schedule/Span of Service* – Route 8 operates Monday through Saturday from 6:30 a.m. until 6:25 p.m. (the last scheduled trip departs DTS at 5:30 p.m.) at 60-minute frequency. On weekdays, an additional peak bus is provided which improves service frequency to 30 minutes from 7:00 a.m. until 9:55 a.m. and from 3:00 p.m. until 6:55 p.m. (the last scheduled trip departs DTS at 6:00 p.m.). Night and Sunday service are not offered. However, segments of Route 8 are served by Route 7 which offers night and Sunday service.
- *Cycle/Layover Times* – Route 8 has a 60-minute cycle time and requires a one bus to operate at 60-minute frequency. During peak periods when the route operates at 30-minute frequency, a second bus is added. There are 55 minutes of scheduled running time and five minutes of scheduled recovery time at the DTS prior to the next departure.
- *Route Transfers* – Route 8 connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the perimeter of downtown. In addition, Route 8 also connects with Routes 5 and 7 at Barracks Road Shopping Center.

Historical Ridership Characteristics

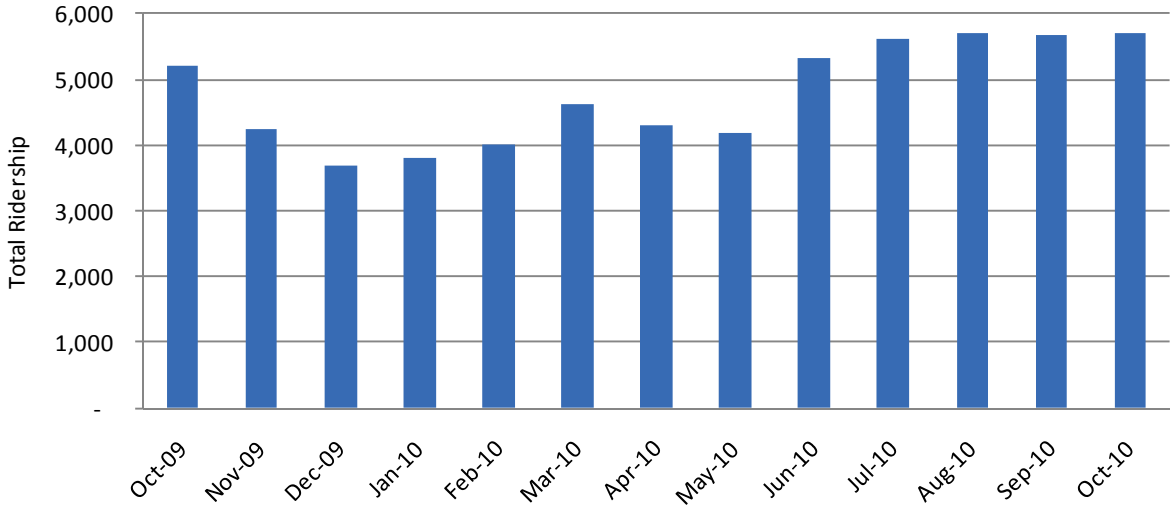
A year-by-year comparison of October ridership from 2008 through 2010 is presented in the figure below. In 2008, Segments of Route 6 (6B) were realigned to create Route 8; thus, ridership records for Route 8 only go back as far as 2008. Since its introduction, ridership on Route 8 has shown steady increases as riders discover this route as an alternative means of connecting DTS and Barracks Road Shopping Center.

Year by Year October Ridership (2008 – 2010)



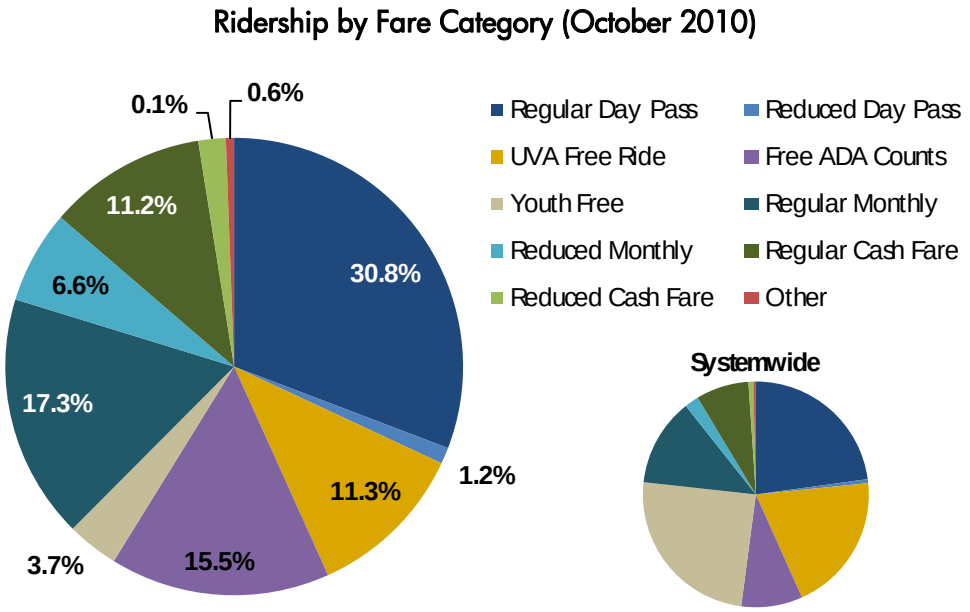
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. The summer and fall months show the highest ridership.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Full-Fare Day Passes generated the highest number of riders (30.8%). These riders were much more prevalent than the systemwide average. Full-Fare Monthly Passes represented the next largest group (17.3%). Free ADA riders (15.5%) were the next largest group followed by UVA riders and Regular Cash Fares, both at 11%.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 8 are as follows:

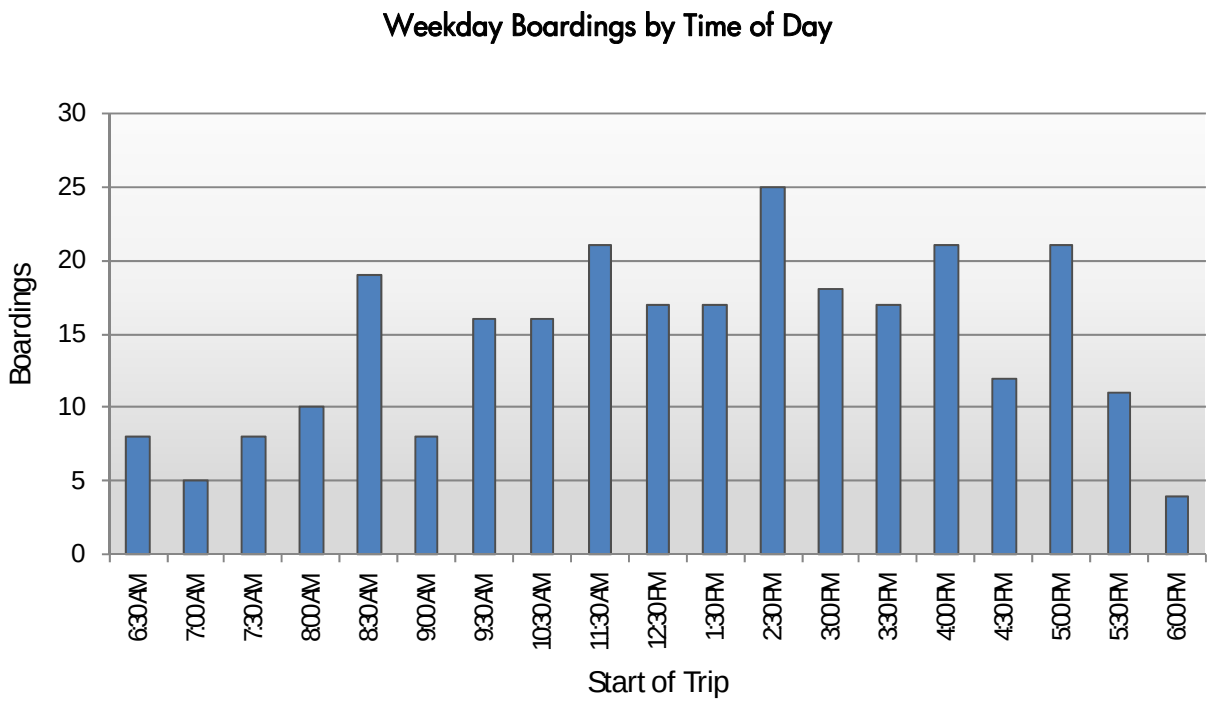
Route 8 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
50	120	104	n/a	274	163	n/a
Maximum Load						
9	14	13	n/a	14	15	n/a
Timepoints Reached On Time						
33%	50%	76%	n/a	55%	92%	n/a

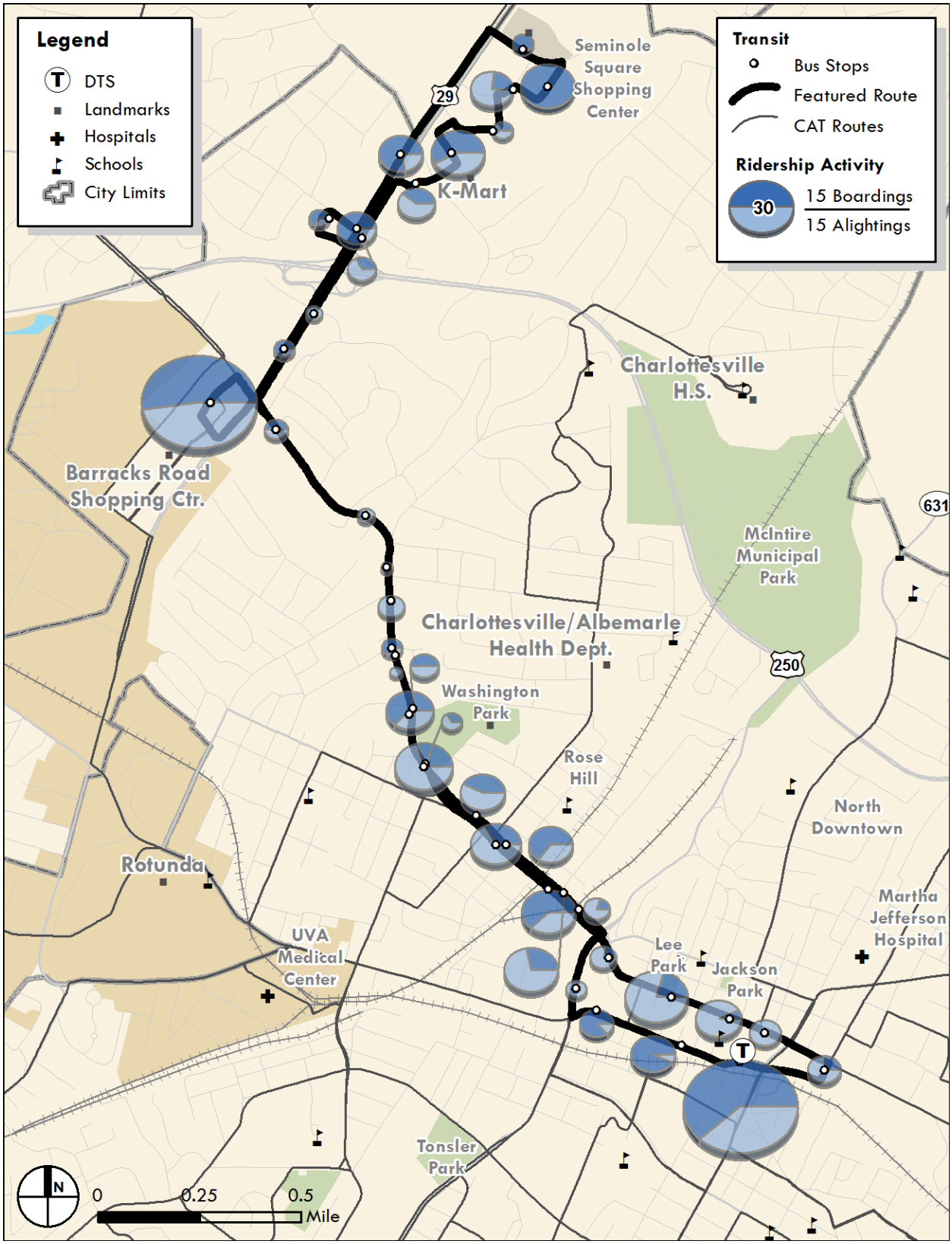
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

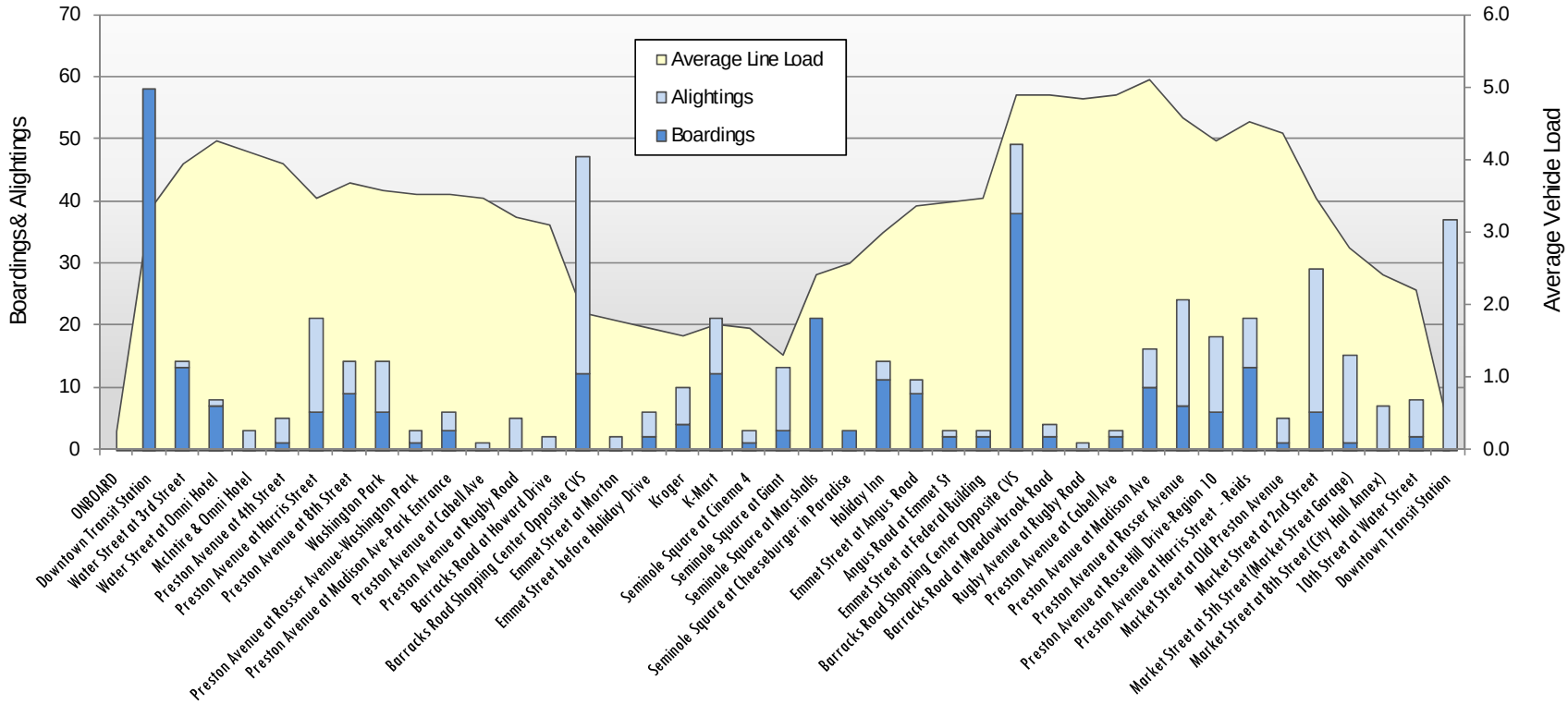
- Ridership on Route 8 is highest during the midday hours. Afternoon peaks carried more riders than morning peaks.
- The maximum observed load was 14 passengers and occurred during the midday hours. The lowest maximum loads were observed during the morning hours.
- The 2:30 p.m. trip carried the most passengers followed by the 11:30 a.m., 4:00 p.m. and 5:00 p.m. trips. The lowest trip of the day was at 6:00 p.m.
- Outside of the DTS, Barracks Road Shopping Center was the highest volume stop on Route 8. Stops along Preston Avenue were also well utilized.
- On-time performance was met 55% of the time. Trips during the morning and midday hours were often early. There were very few instances of late arrivals.

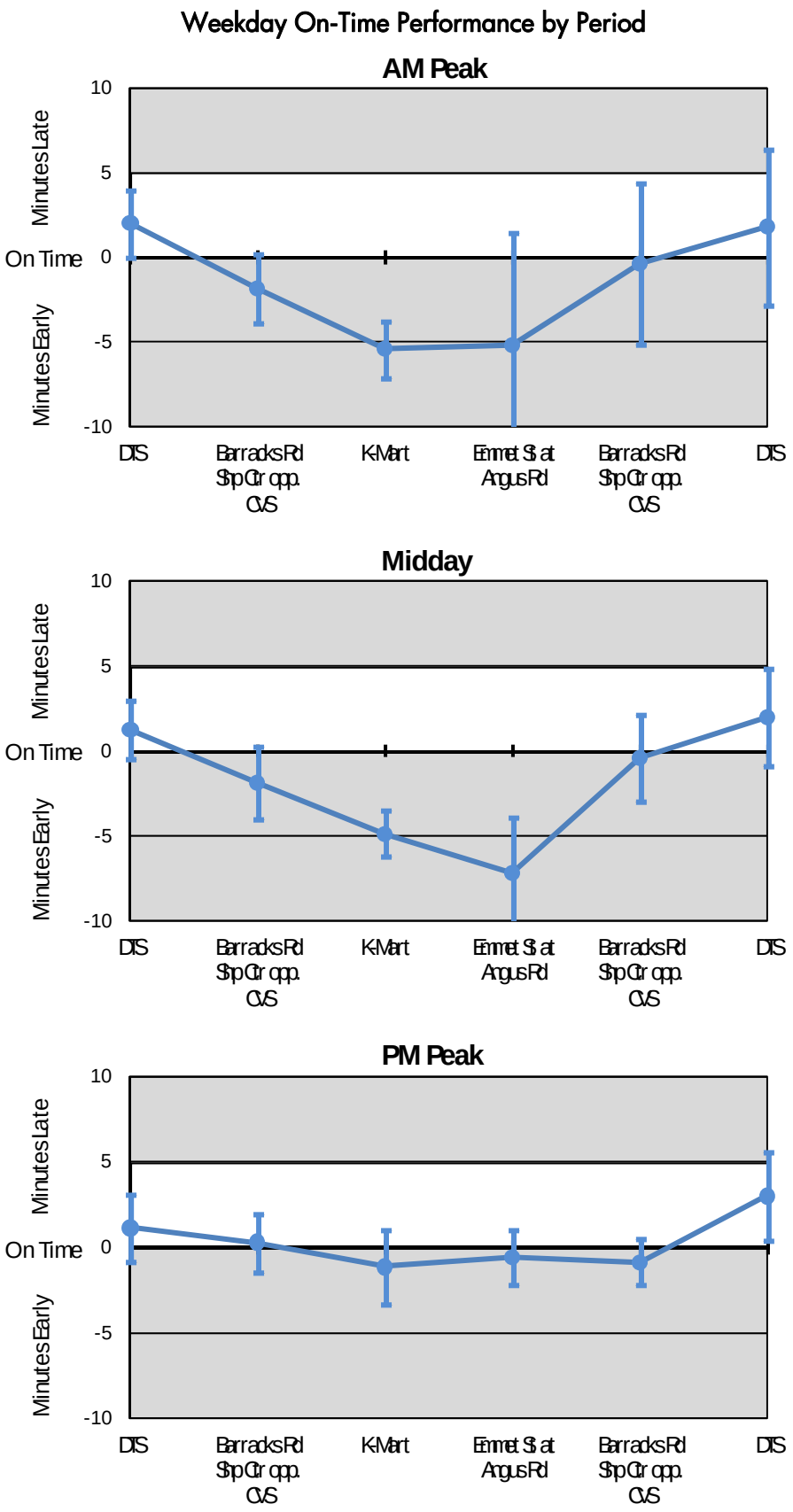

Weekday Boardings by Time of Day
Boardings
30
25
20
15
10
5
0
6:30 AM
7:00 AM
7:30 AM
8:00 AM
8:30 AM
9:00 AM
9:30 AM
10:30 AM
11:30 AM
12:30 PM
1:30 PM
2:30 PM
3:00 PM
3:30 PM
4:00 PM
4:30 PM
5:00 PM
5:30 PM
6:00 PM
Start of Trip

Weekday Ridership Activity



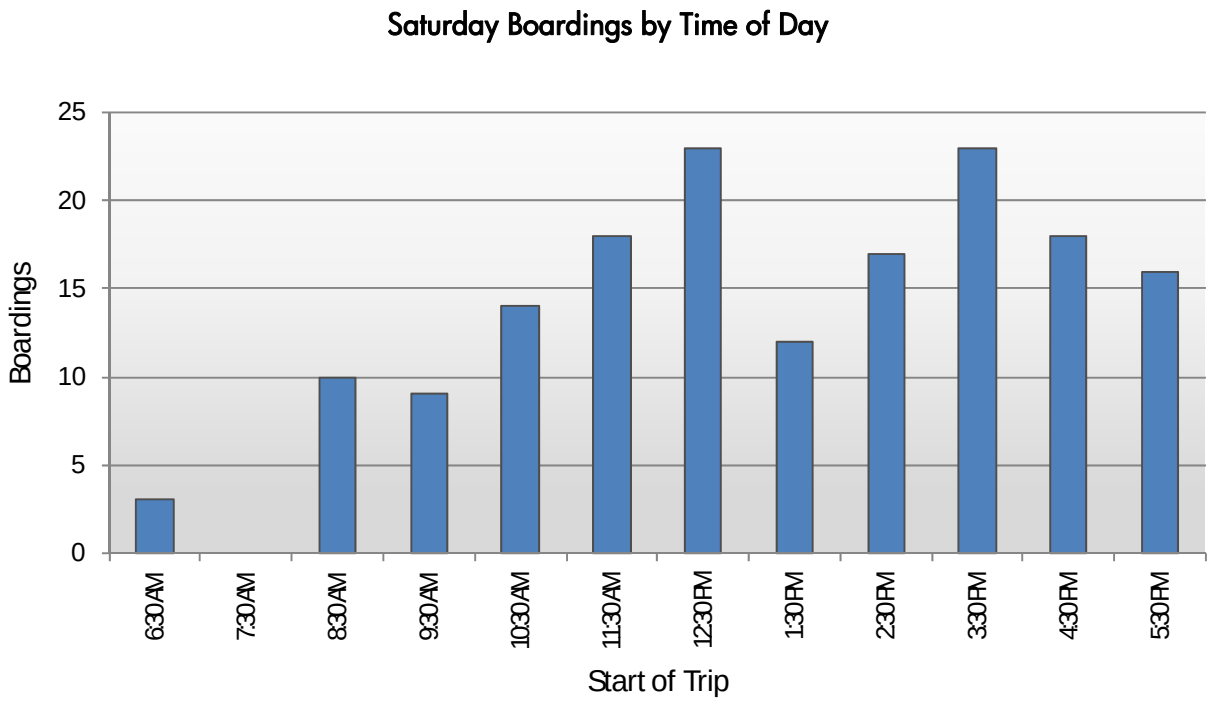
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Midday
PM Peak
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
Barracks Rd Shp Ctr opp. CVS
K-Mart
Emmet St at Angus Rd
Barracks Rd Shp Ctr opp. CVS
DTS

Saturday Observations

- The busiest trips of the day occur at 12:30 and 3:30 p.m. Trips in the morning hours were the least utilized.
- Saturday trips carry 59% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 15. This is one passenger more than the highest weekday maximum load.
- Saturday trips were on-time 92% of the time.

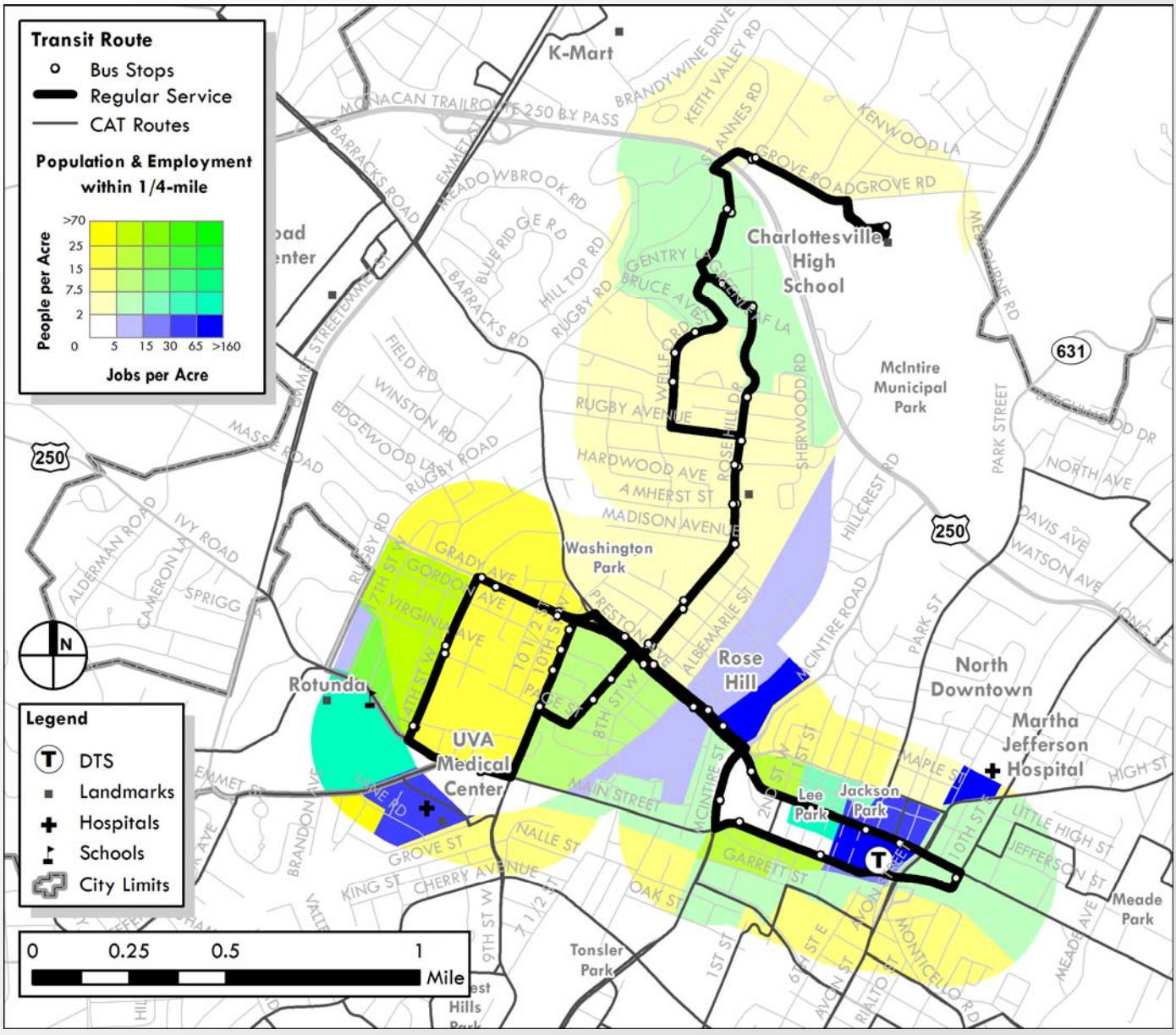


Charlottesville Area Transit – Route 9 – Charlottesville High School

Route 9 operates primarily as a linear route connecting downtown Charlottesville with Charlottesville High School via the University of Virginia Corner. Route 9 also provides service to the Charlottesville Free Clinic.

Of the 17 routes in the CAT system, Route 9 performs below-average on weekdays and slightly better on Saturdays.

Route 9	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 a.m.- 6:40 p.m.		6:45 a.m. - 6:40 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	60		60	
Layover Time (min)	5		5	
Route Statistics				
Round Trips	12		12	
Daily Revenue-Hours	12		12	
Daily Revenue-Miles	129.6		129.6	
Peak Buses	1.0		1.0	
Route Productivity				
Boardings (Rank)	156	(10)	85	(10)
Riders/Rev.-Hr. (Rank)	13.0	(13)	7.1	(12)
Riders/Rev.-Mi. (Rank)	1.2	(13)	0.7	(11)
Riders/Trip (Rank)	13.0	(7)	7.1	(10)



Description of Existing Alignment

Route 9 begins at the Downtown Transit Station (DTS) on Water Street and travels west to McIntyre Street where it continues north and then west on Preston Avenue. At 10th Street, Route 9 turns south and then west on Main Street to serve the UVA Corner. The bus then travels north on 14th Street, east on Grady Avenue and north on Rose Hill Drive, passing the Charlottesville Free Clinic along the way. Route 9 continues north to Charlottesville High School via Del Mar Drive, Gentry Lane, Dairy Road and Grove Road. The return trip follows a similar alignment with a few differences. From Charlottesville High School, Route 9 travels west on Grove Road and south on Dairy Road and Gentry Lane. The route then turns left on Greenleaf Lane, right on Wellford Street and left on Rugby Avenue before returning southbound on Rose Hill Avenue. At Preston Avenue, Route 9 turns right to begin its loop to the UVA Corner via Grady Avenue, West Main Street, 10th Street, Page Street and 9th Street. Upon returning to Preston Avenue, Route 9 makes its way back to DTS by traveling east on Preston Avenue and Market Street, south on 10th Street and west on Water Street.

Route 9 primarily serves commercial and retail interests along Preston Avenue as well as the UVA Corner. The areas in-between are more residential in nature. The areas north of Preston Avenue are also primarily residential. Major destinations along Route 8 include:

- Federal Courthouse
- Region Ten Community Services Board
- Washington Park
- University of Virginia
- American Red Cross
- Charlottesville Free Clinic
- Charlottesville City Schools
- Charlottesville High School

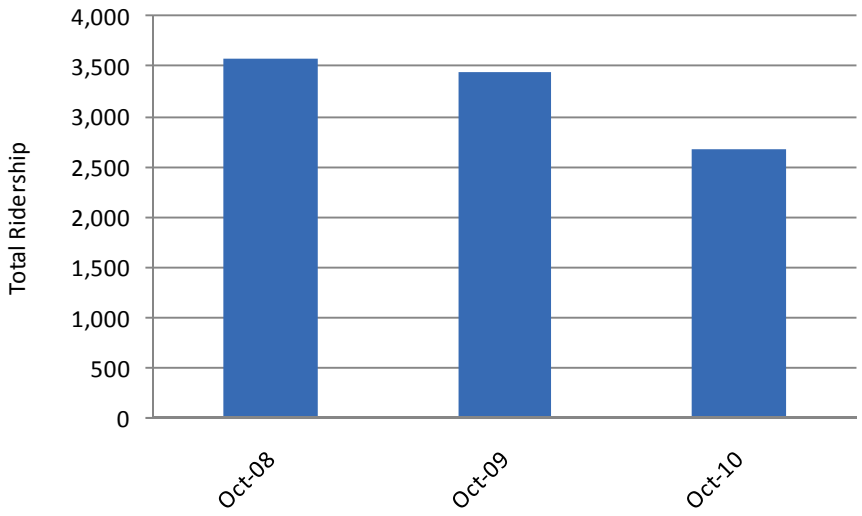
Key Route Issues and Observations

- *Alignment* – Route 9 is primarily linear and bi-directional. There are limited segments and stops that only receive service in one direction. However, this mostly occurs toward the ends of the route, making it less problematic for riders. The route also features a looping movement toward the middle of the alignment to serve the UVA Corner. Riders may find this alignment confusing as the direction of travel is not necessarily indicative of the route's destination. Through-passengers whose trip needs are not within this loop may also find this movement time-consuming.
- *Stops* – Bus stops along Route 9 are consistently spaced as demand dictates. There are no stops along Gentry Lane and Grove Road. However, demand in this area may be minimal and these streets are merely used as a means of reaching Charlottesville High School.
- *Schedule/Span of Service* – Route 9 operates Monday through Saturday from 6:45 a.m. until 6:40 p.m. (the last scheduled trip departs DTS at 5:45 p.m.) at 60-minute frequency. Night and Sunday service are not offered.
- *Cycle/Layover Times* – Route 9 has a 60-minute cycle time and requires a one bus to operate at 60-minute frequency. There are 52 minutes of scheduled running time with three minutes of scheduled recovery time at Charlottesville High School and five minutes of scheduled recovery time at the DTS prior to the next departure.
- *Route Transfers* – Route 9 connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the perimeter of downtown. In addition, Route 9 also connects with Routes 7 and 8 as well as the Trolley as it circulates through the UVA Corner loop.

Historical Ridership Characteristics

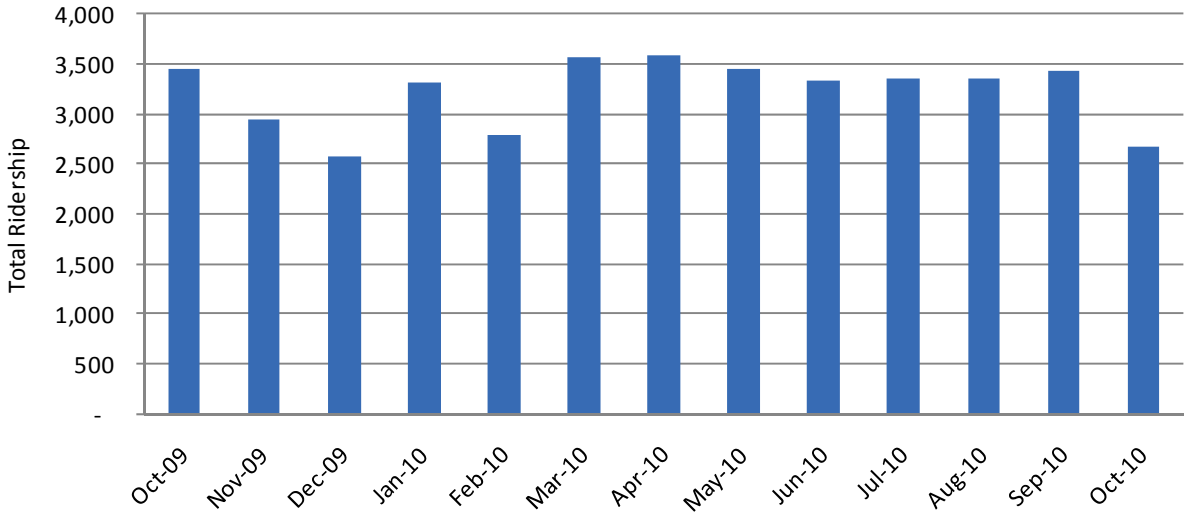
A year-by-year comparison of October ridership from 2008 through 2010 is presented in the figure below. Segments of Route 3 (3B) were realigned to create Route 9; thus, ridership records for Route 9 only go back as far as 2008. Since its introduction, Route 9 has shown a decline in boardings during the three years in which ridership has been recorded.

Year by Year October Ridership (2008 – 2010)



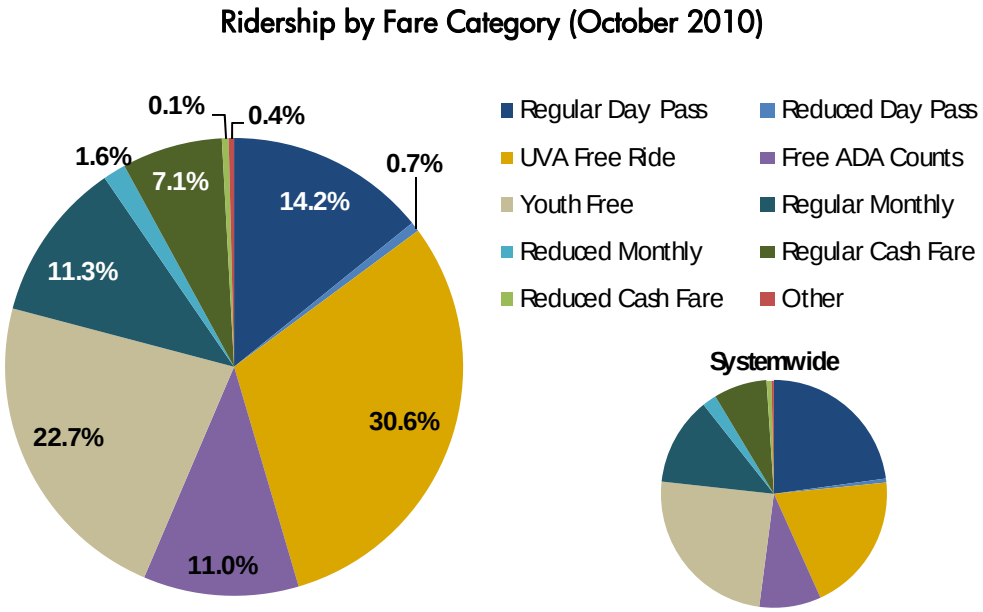
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. March and April recorded a slight advantage over the other months. December, February and October 2010 were the lowest of the months reported.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. UVA Riders generated the highest number of passengers (30.6%) followed by Free Youth Riders (22.7). Full-Fare Day Passes represented the next largest group (14.2%) followed by Regular Monthly Pass and Regular Cash Fares, both at 11%. Both UVA Riders and Free ADA Riders were slightly higher than systemwide.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 9 are as follows:

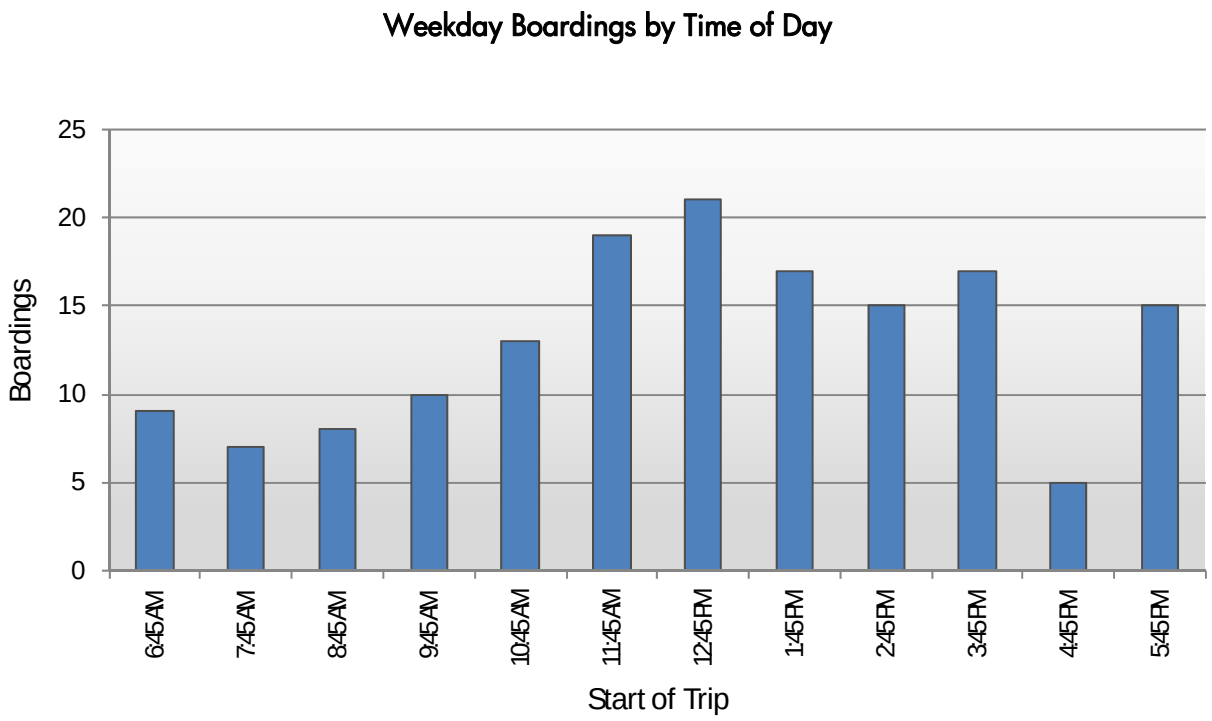
Route 9 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
24	95	37	n/a	156	85	n/a
Maximum Load						
4	12	8	n/a	12	13	n/a
Timepoints Reached On Time						
100%	76%	86%	n/a	85%	73%	n/a

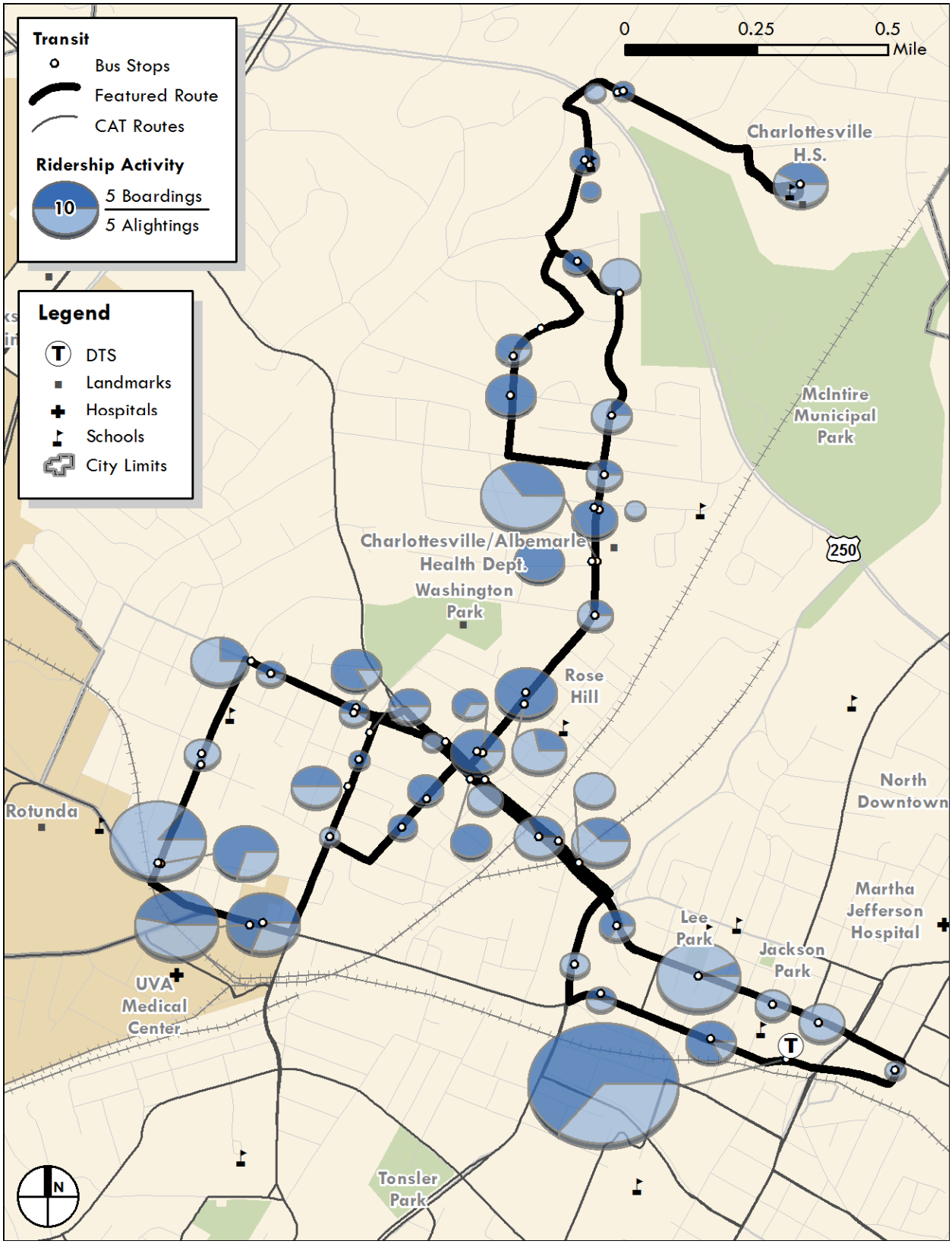
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

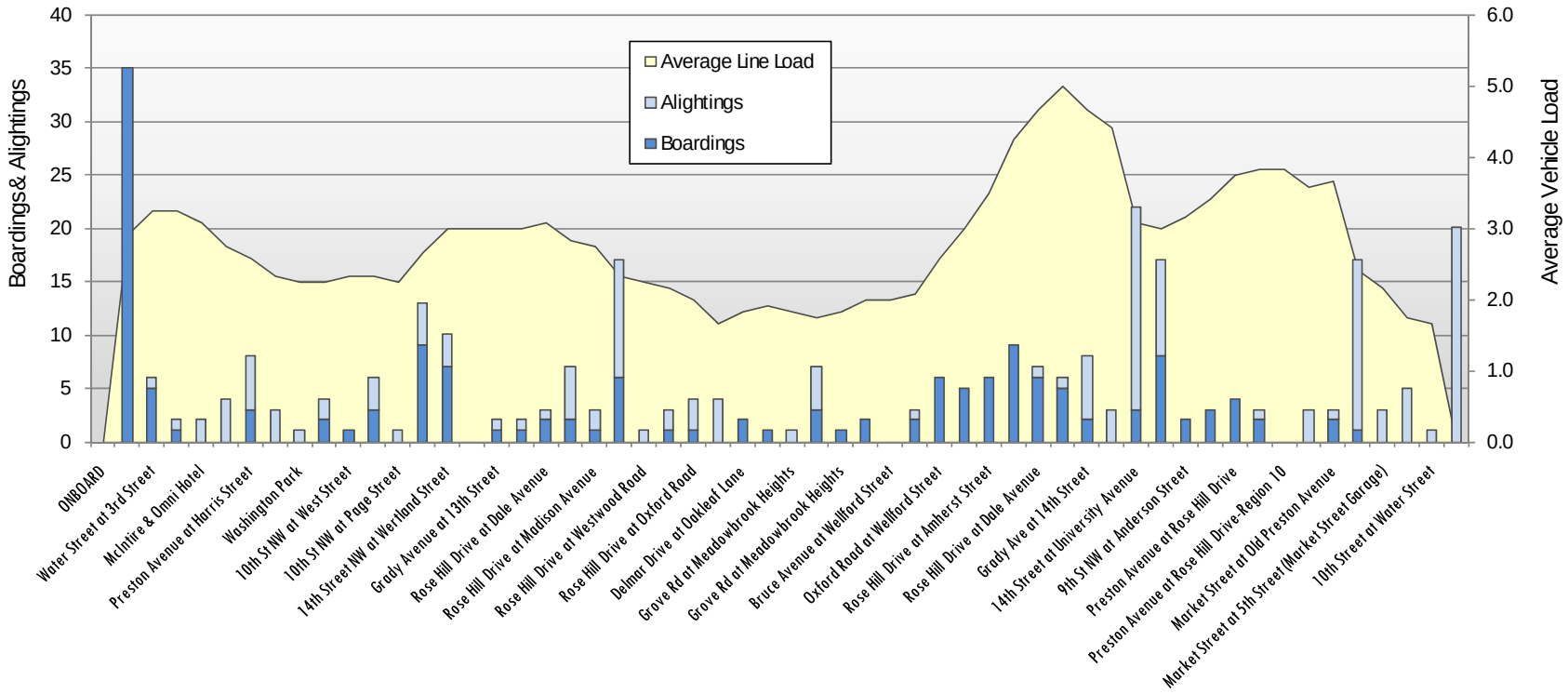
- Ridership on Route 9 is highest during the midday hours. Afternoon peaks carried more riders than morning peaks.
- The maximum observed load was 12 passengers and occurred during the midday hours. The lowest maximum loads were observed during the morning hours.
- The 12:45 p.m. trip carried the most passengers followed by the 11:45 a.m., 1:45 p.m. and 3:45 p.m. trips. The lowest trip of the day was at 4:45 p.m.
- Outside of the DTS, the stops at the UVA Corner were the most utilized.
- On-time performance was met 85% of the time. Trips during the midday were the most problematic.

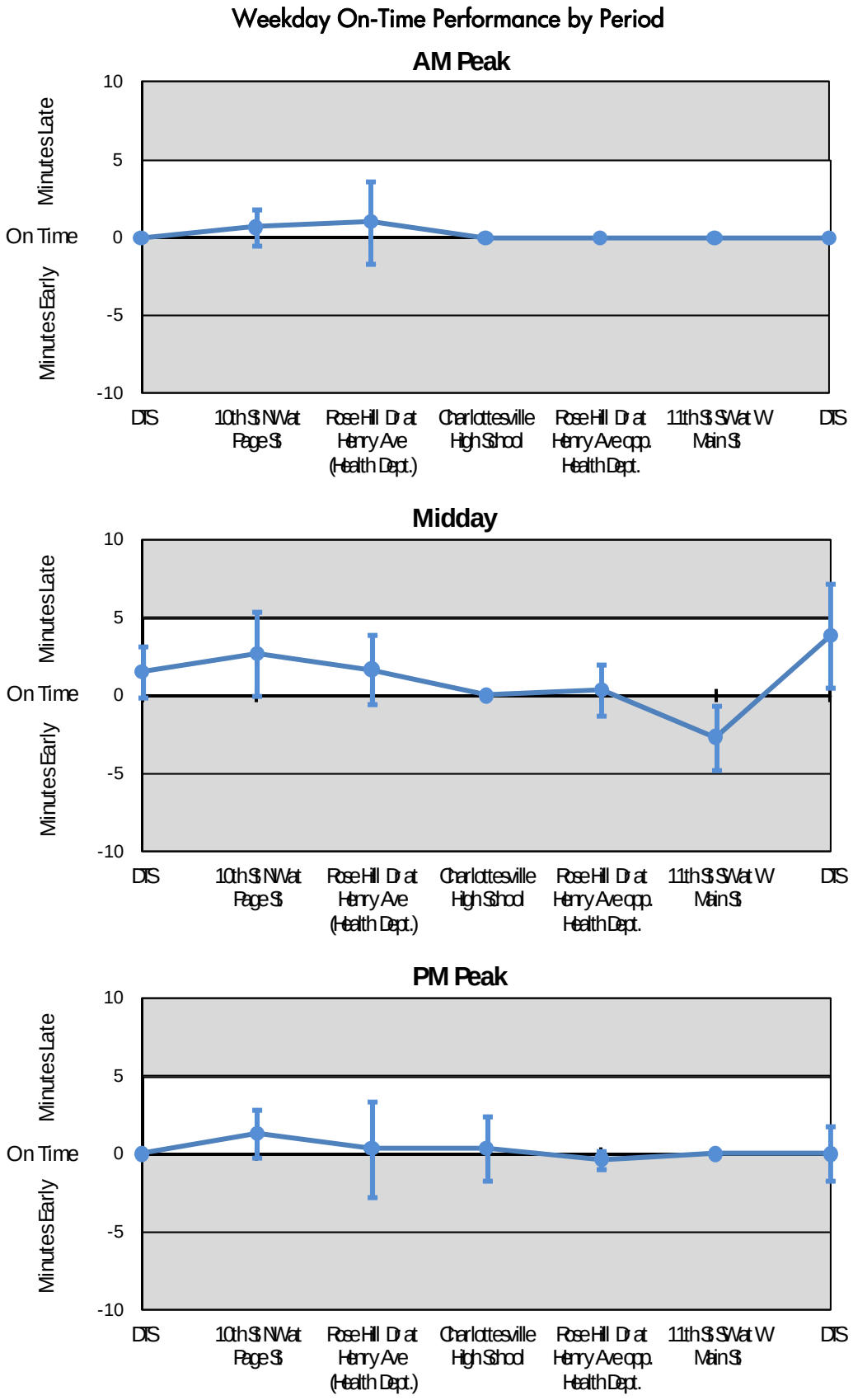

Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:45AM
7:45AM
8:45AM
9:45AM
10:45AM
11:45AM
12:45PM
1:45PM
2:45PM
3:45PM
4:45PM
5:45PM
Start of Trip

Weekday Ridership Activity



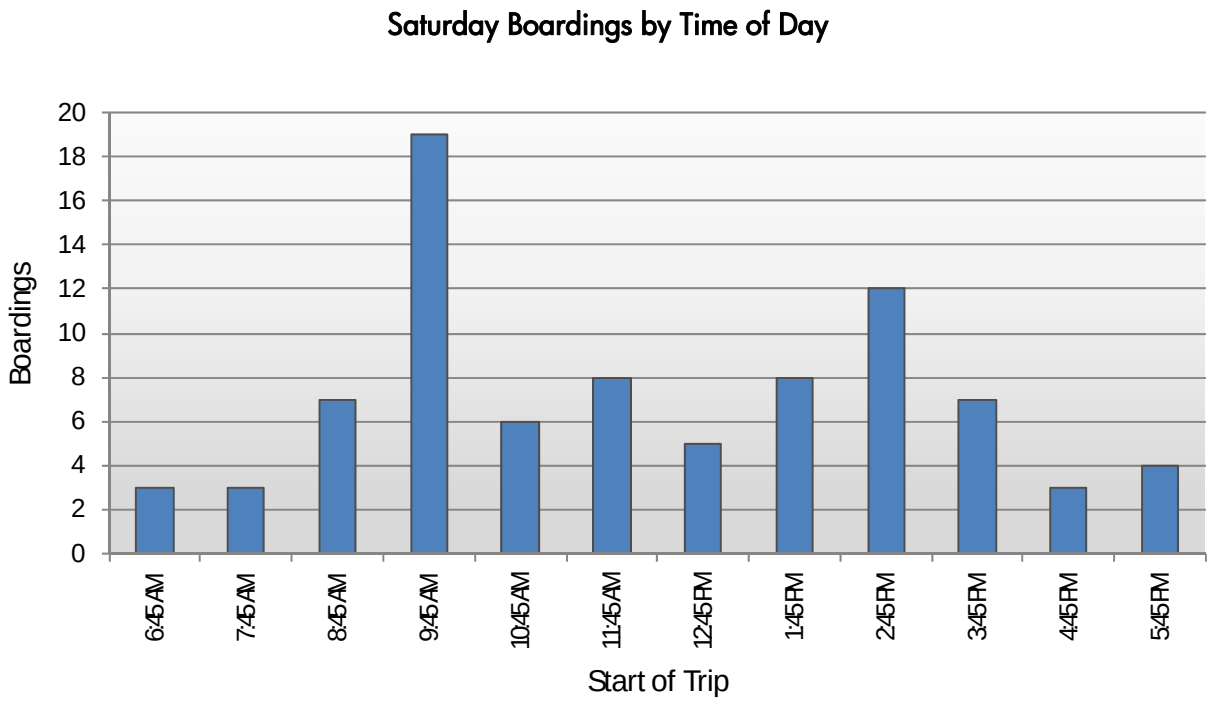
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Midday
PM Peak
Minutes Late
On Time
Minutes Early
10
5
0
-5
-10
DTS
10th St NW at Page St
Rose Hill Dr at Henry Ave (Health Dept.)
Charlottesville High School
Rose Hill Dr at Henry Ave opp. Health Dept.
11th St SW at W Main St
DTS

Saturday Observations

- The busiest trips of the day occur at 9:45 a.m. and 2:45 p.m. The first two trips and last two trips of the day were the least utilized.
- Saturday trips carry 54% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 13. This is one passenger more than the highest weekday maximum load.
- Saturday trips were on-time 73% of the time.

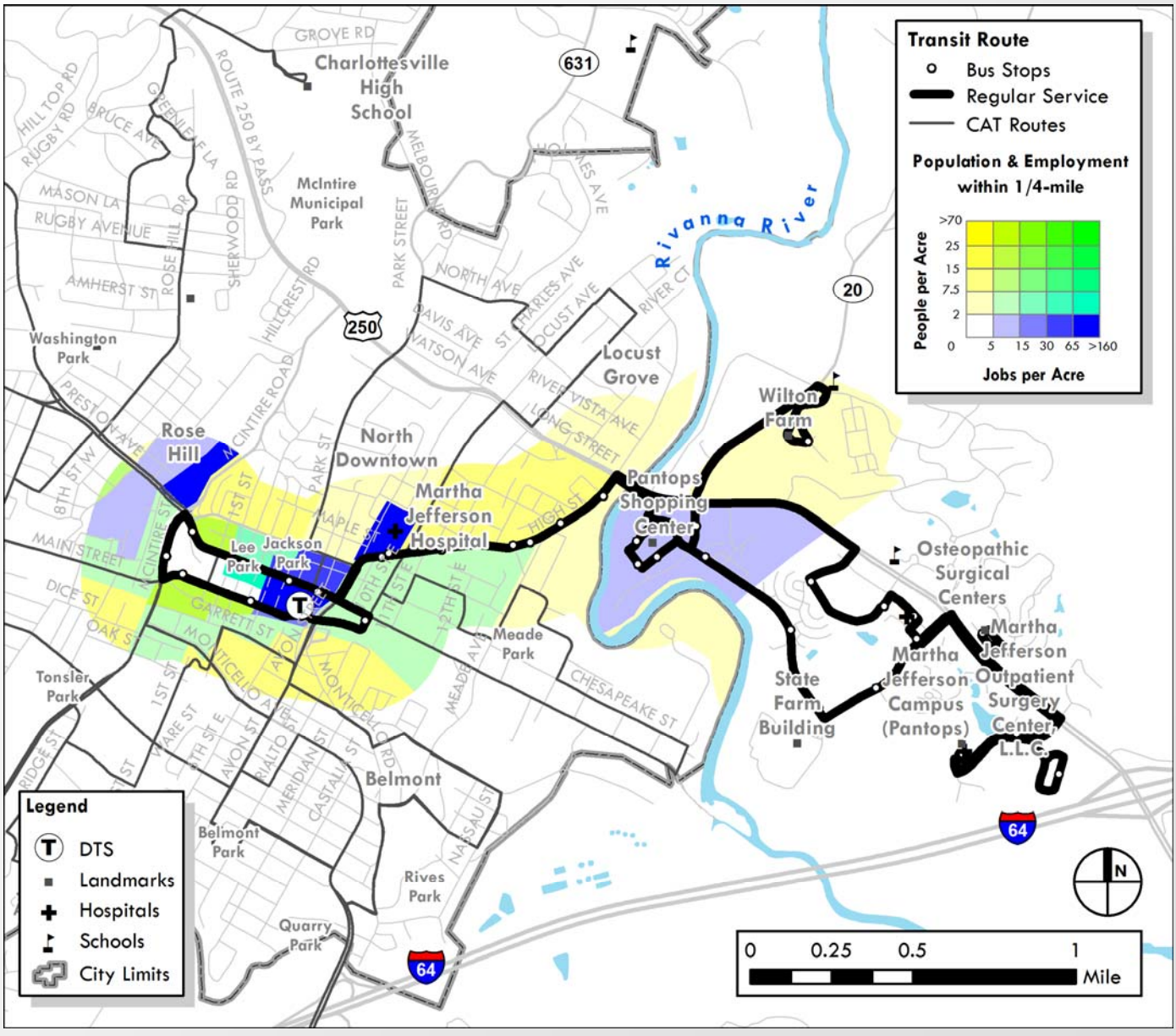


Charlottesville Area Transit – Route 10 – Pantops & Downtown

Route 10 operates primarily as a linear route connecting downtown Charlottesville with the Pantops area in Albemarle County. Route 10 is also one of three routes that serve Martha Jefferson Hospital and the only route in the vicinity of the new campus currently under construction. While the route operates bi-directionally along High Street, the termini feature large looping movements. Operating costs for Route 10 are funded by Albemarle County.

Of the 17 routes in the CAT system, Route 10 performs above-average on weekdays and Saturdays.

Route 10	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:15 a.m. - 7:12 p.m.		6:15 a.m. - 7:12 p.m.	
Frequency (Pk-Mid-Eve)	60-60-n/a		60-60-n/a	
Cycle Time (min)	60		60	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	13		13	
Daily Revenue-Hours	13		13	
Daily Revenue-Miles	153.4		153.4	
Peak Buses	1.0		1.0	
Route Productivity				
Boardings (Rank)	267	(6)	229	(4)
Riders/Rev.-Hr. (Rank)	20.5	(7)	17.6	(4)
Riders/Rev.-Mi. (Rank)	1.7	(5)	1.5	(5)
Riders/Trip (Rank)	20.5	(3)	17.6	(2)



Description of Existing Alignment

Route 10 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge McIntyre Road, north to Preston Avenue and then east on Market Street. At 9th Street, the route turns north and then bears right onto High Street followed by a right turn onto Long Street. Route 10 continues on Long Street (US 250) and turns into the Pantops Shopping Center. After serving the shopping center, Route 10 crosses US 250 and continues to Wilton Farm Apartments via Stony Point Road and Fontana Drive. From the apartments, the route returns back to US 250 and travels east, deviating to the DMV via Hansen Road, Rolkin Road, Abbey Road and Hickman Road. Route 10 returns to US 250 on State Farm Boulevard and resumes its trip eastbound to Peter Jefferson Parkway where it serves the Martha Jefferson Hospital Pantops Campus and Veterans Administration Building. The inbound trip returns to US 250 and heads west, deviating into Westminster Canterbury and the Social Security Administration offices via Pantops Mountain Road. Upon returning to westbound US 250, Route 10 turns left on State Farm Boulevard and right on South Pantops Drive, back to Pantops Shopping Center. From the shopping center, Route 10 returns to DTS via US 250, High Street, 9th Street, Market Street, 10th Street and Water Street.

Route 10 primarily serves commercial and retail interests with some residential scattered along the alignment. Medical and professional services are prevalent given the proximity to Martha Jefferson Hospital. Major destinations along Route 10 include:

- Federal Courthouse
- Charlottesville City Hall
- Martha Jefferson Hospital
- Pantops Shopping Center
- Wilton Farm Apartments
- Rivanna Ridge Shopping Center
- Department of Motor Vehicles
- Martha Jefferson Hospital Pantops Campus
- Veterans Administration Office
- Westminster Canterbury
- Social Security Administration Office
- State Farm

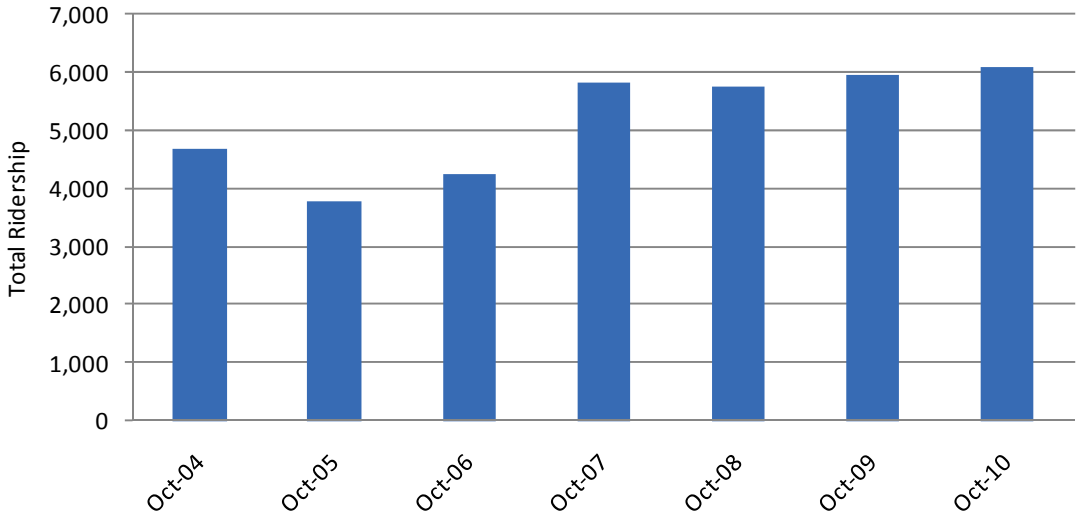
Key Route Issues and Observations

- *Alignment* – Route 10 is primarily linear and bi-directional along High Street and the outer end of the route. However, there are significant portions in the middle of the route that are only served in one direction. This may be confusing and/or time-consuming for riders who are trying to move quickly from one of the route to the other.
- *Stops* – Bus stops along Route 10 are consistently spaced as demand and traffic flow dictate.
- *Schedule/Span of Service* – Route 10 operates Monday through Saturday from 6:15 a.m. until 7:12 p.m. (the last scheduled trip departs DTS at 6:15 p.m.) at 60-minute frequency. Night service along a portion of the alignment is provided by Route 24. Sunday service is not offered.
- *Cycle/Layover Times* – Route 10 has a 60-minute cycle time and requires a one bus to operate at 60-minute frequency. There are 57 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure.
- *Route Transfers* – Route 10 connects with all CAT routes (except Route 5) at the DTS. Additional transfer opportunities occur as the route circulates around the downtown pedestrian mall. Route 10 also intersects with Routes 1A and 2A near Martha Jefferson Hospital.

Historical Ridership Characteristics

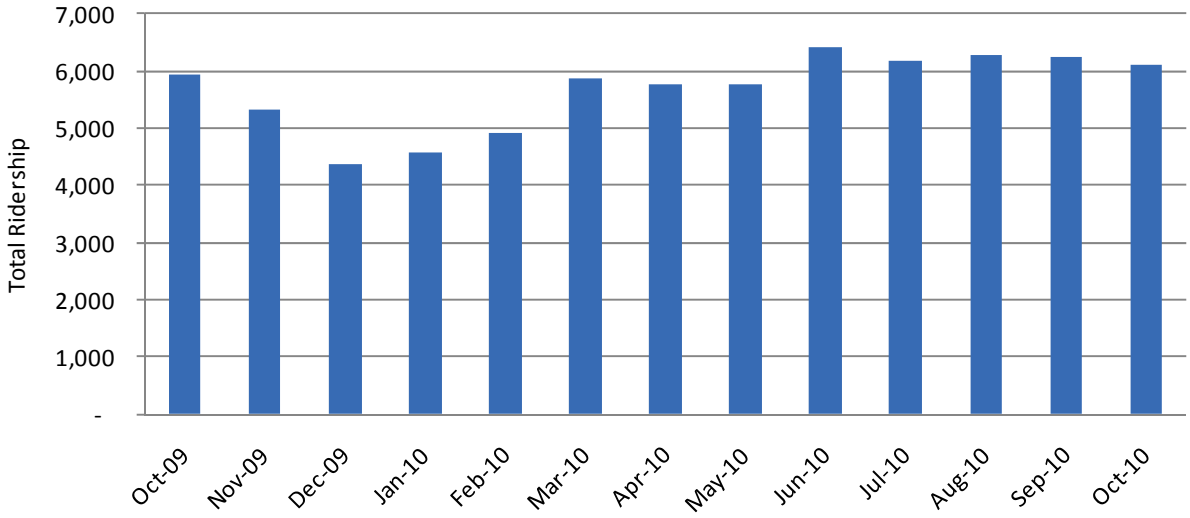
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. After a decline in 2005, ridership on Route 10 has shown increases, particularly in 2007. This is when frequency was actually reduced to 60 minutes as the prior schedule suffered from on-time performance issues.

Year by Year October Ridership (2004 – 2010)



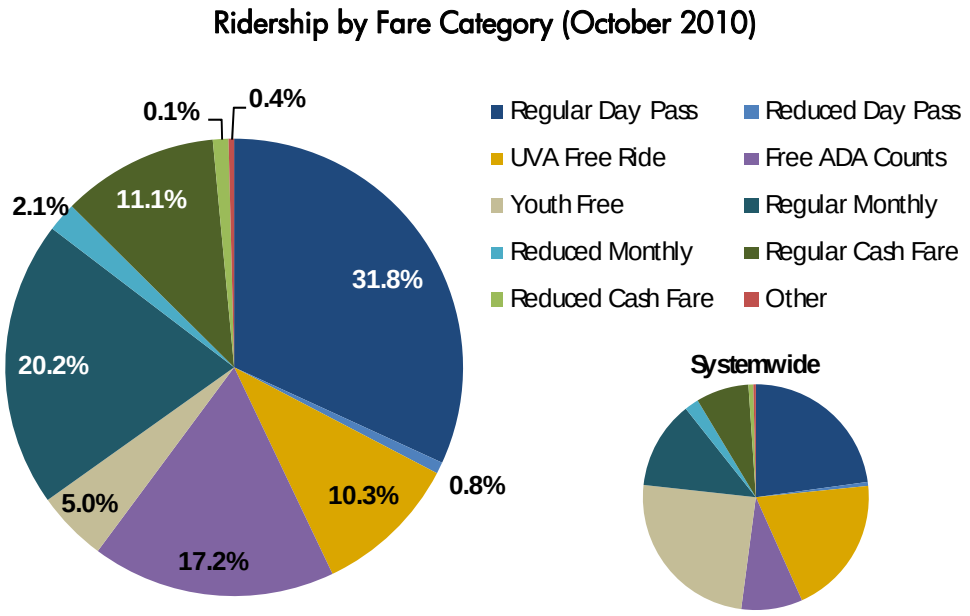
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. The winter months tend to show the lowest ridership while summer months recorded the highest.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Full-Fare Day Passes generated the highest number of riders (31.8%). These riders were much more prevalent than the systemwide average. Full-Fare Monthly Passes represented the next largest group (20.2%). Free ADA riders (17.2%) were the next largest group followed by Full-Fare Cash riders (11.1%). All but Full-Fare Cash riders were nearly double systemwide averages.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 8 are as follows:

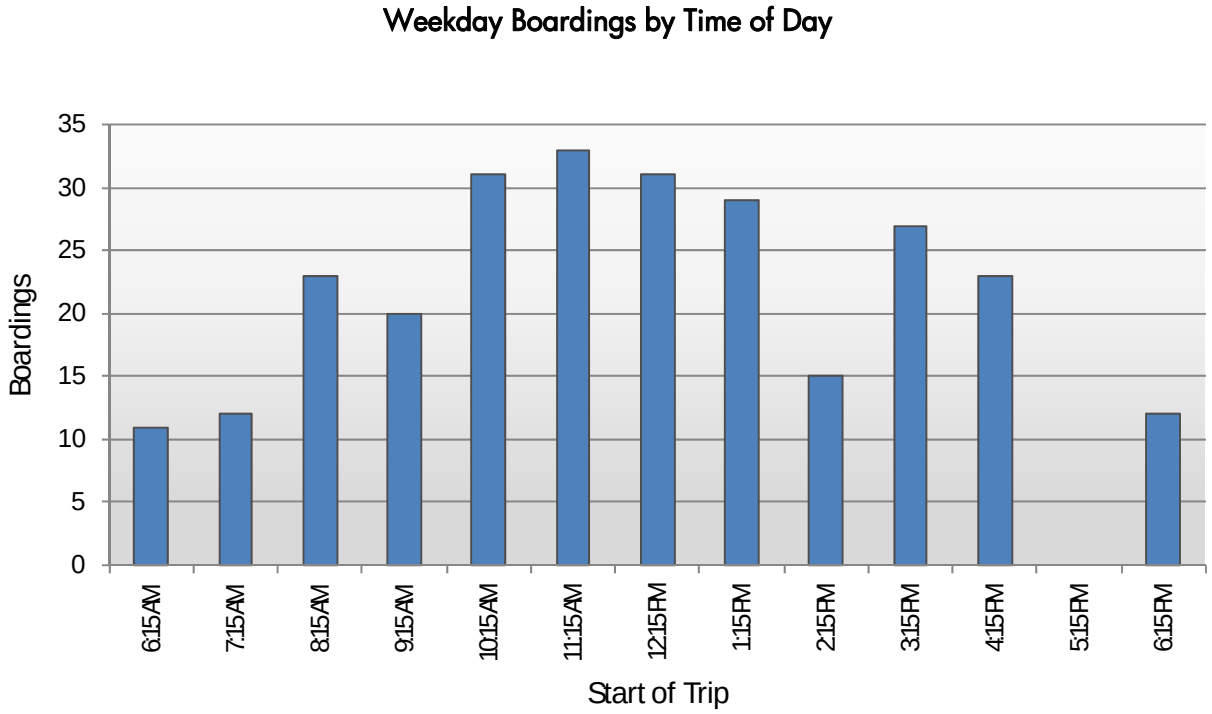
Route 10 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
46	159	62	n/ a	267	229	n/ a
Maximum Load						
16	22	14	n/ a	22	19	n/ a
Timepoints Reached On Time						
70%	44%	14%	n/ a	43%	67%	n/ a

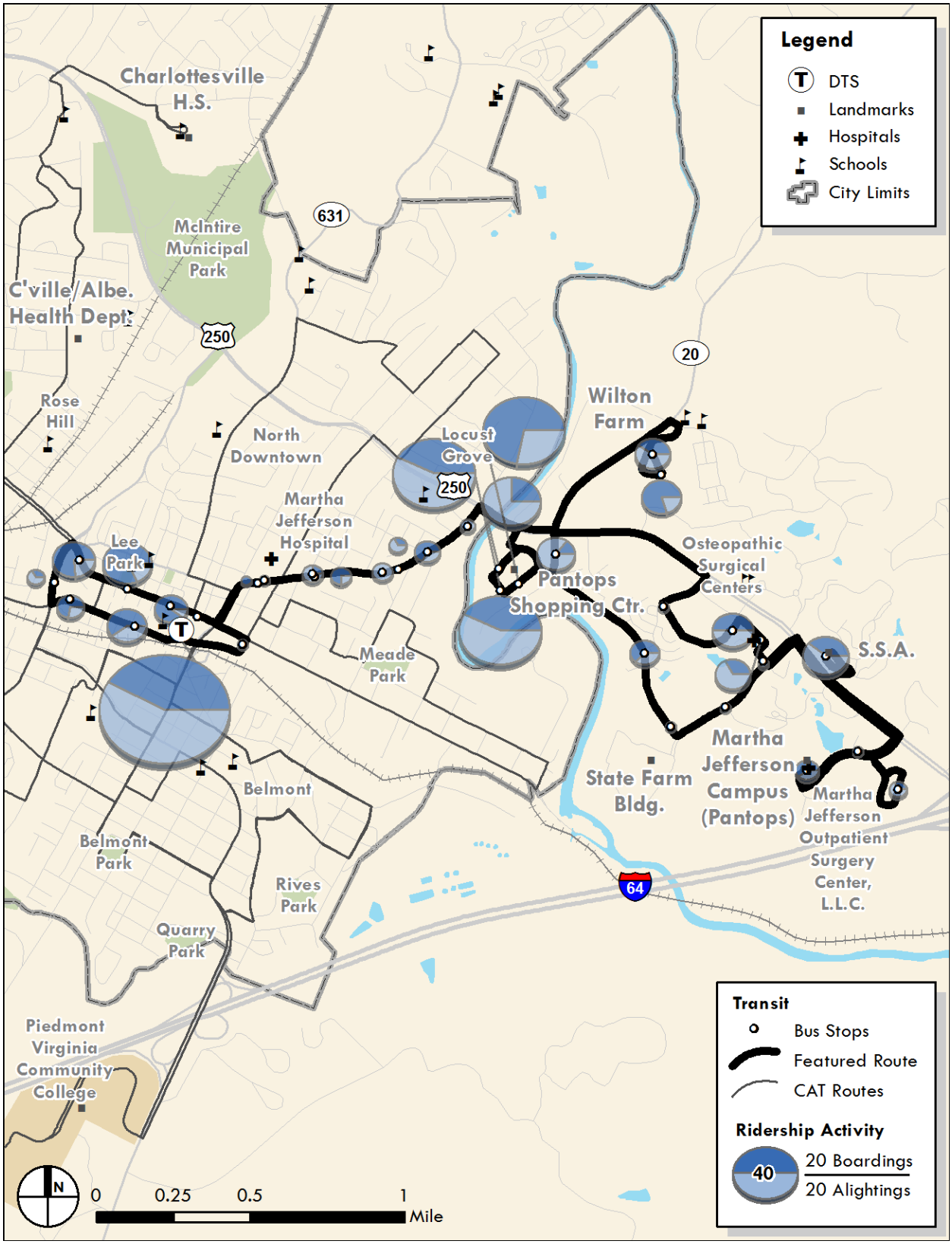
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

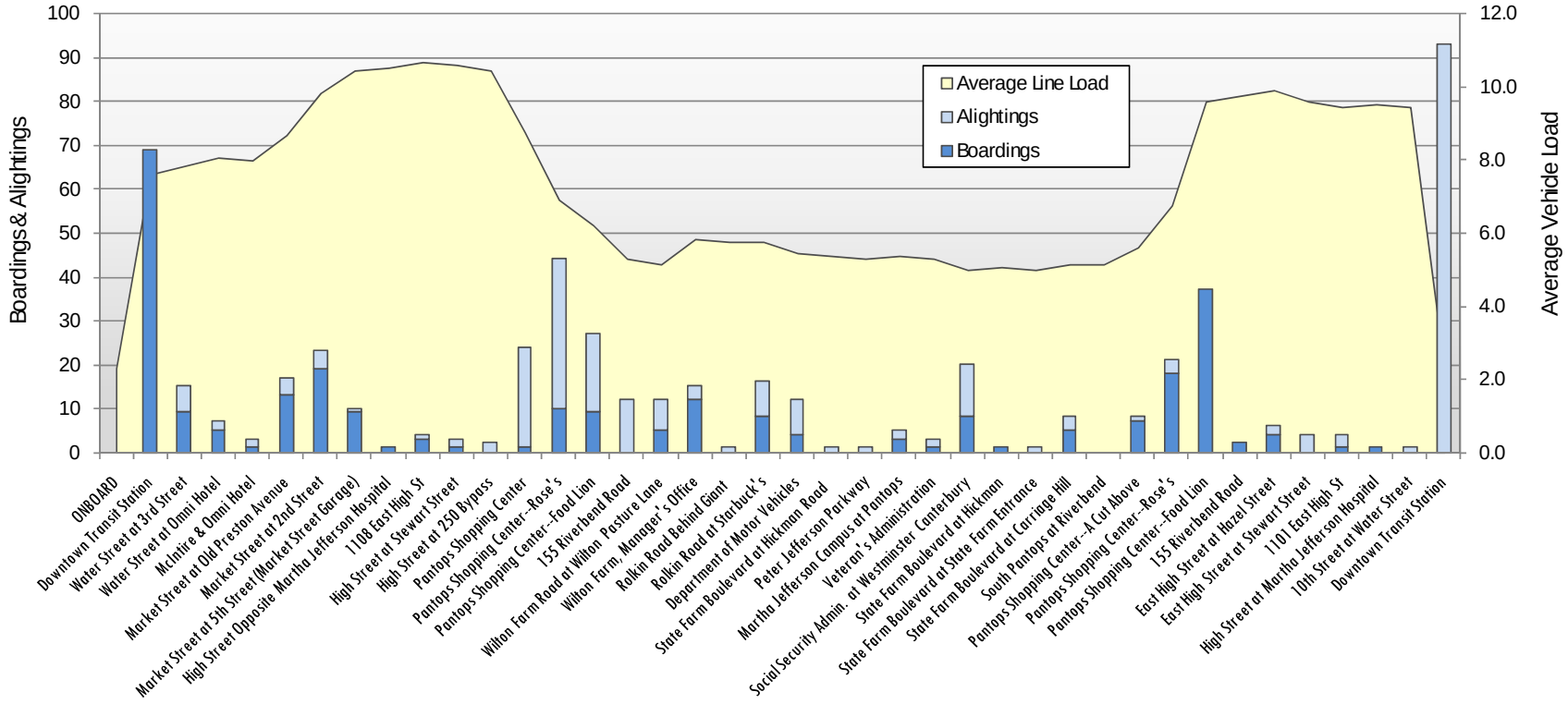
- Ridership on Route 10 is highest during the midday hours. Afternoon peaks carried more riders than morning peaks.
- The maximum observed load was 22 passengers and occurred during the midday hours. The lowest maximum loads were observed during the afternoon hours.
- The 11:15 a.m. trip carried the most passengers followed by the 12:15 p.m., 10:15 a.m. and 1:15 p.m. trips. The lowest trip of the day was at 5:15 p.m.
- Outside of the DTS, Pantops Shopping Center was the highest volume stop on Route 10. Stops along Market Street were also well utilized.
- On-time performance was met 43% of the time. Trips during the midday and afternoon hours were the most problematic with buses consistently late throughout their trips.

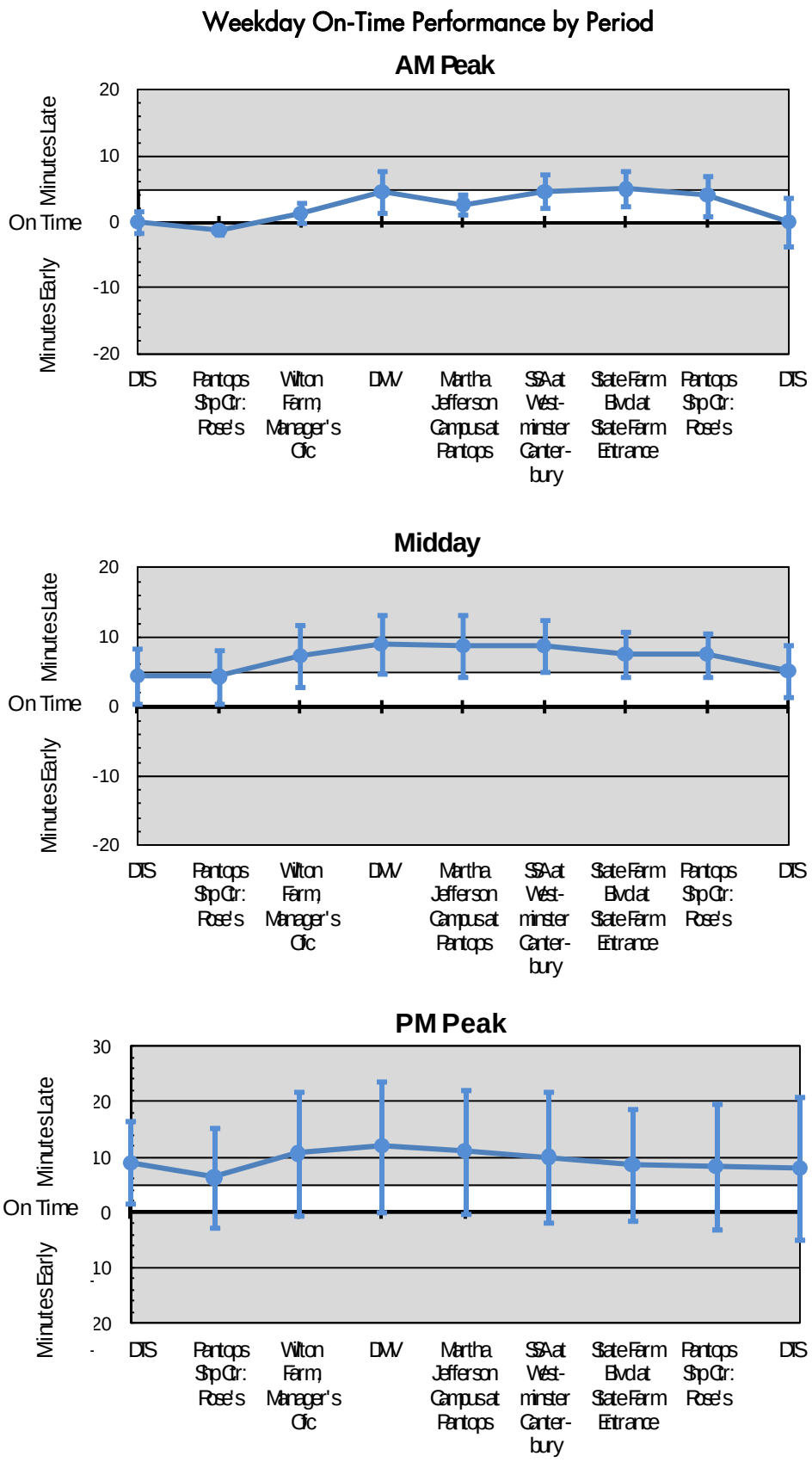

Weekday Boardings by Time of Day
Boardings
35
30
25
20
15
10
5
0
6:15 AM
7:15 AM
8:15 AM
9:15 AM
10:15 AM
11:15 AM
12:15 PM
1:15 PM
2:15 PM
3:15 PM
4:15 PM
5:15 PM
6:15 PM
Start of Trip

Weekday Ridership Activity



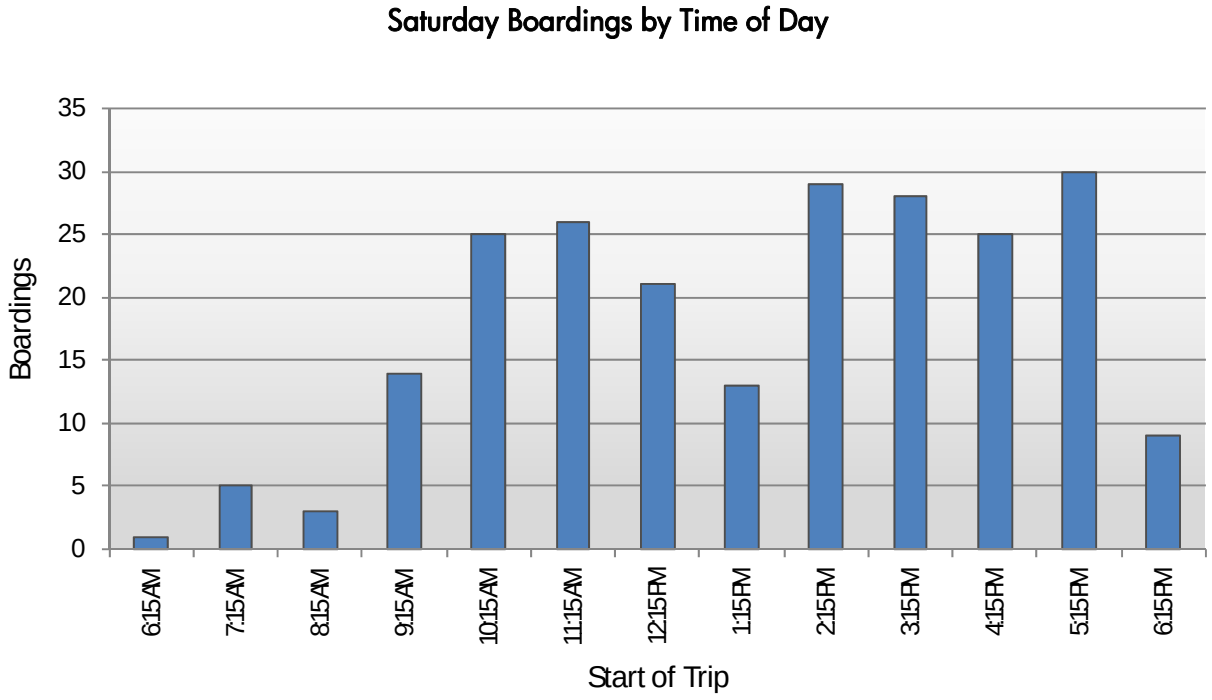
Weekday Ridership by Stop and Average Line Loads




Weekday On-Time Performance by Period
AM Peak
Minutes Late
On Time
Minutes Early
20
10
0
-10
-20
DTS
Pantops Shp Ctr: Rose's
Wilton Farm, Manager's Ofc
DMV
Martha Jefferson Campus at Pantops
SBA at West-minster Canter-bury
State Farm Blvd at State Farm Entrance
Pantops Shp Ctr: Rose's
DTS
Midday
Minutes Late
On Time
Minutes Early
20
10
0
-10
-20
DTS
Pantops Shp Ctr: Rose's
Wilton Farm, Manager's Ofc
DMV
Martha Jefferson Campus at Pantops
SBA at West-minster Canter-bury
State Farm Blvd at State Farm Entrance
Pantops Shp Ctr: Rose's
DTS
PM Peak
Minutes Late
On Time
Minutes Early
30
20
10
0
10
20
DTS
Pantops Shp Ctr: Rose's
Wilton Farm, Manager's Ofc
DMV
Martha Jefferson Campus at Pantops
SBA at West-minster Canter-bury
State Farm Blvd at State Farm Entrance
Pantops Shp Ctr: Rose's
DTS

Saturday Observations

- The busiest trips of the day occur at 5:15, 2:15 and 3:15 p.m. Trips in the morning hours were the least utilized.
- Saturday trips carry 86% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was 19.
- Saturday trips were on-time 67% of the time. As with weekdays, most of the performance issues were associated with late buses.

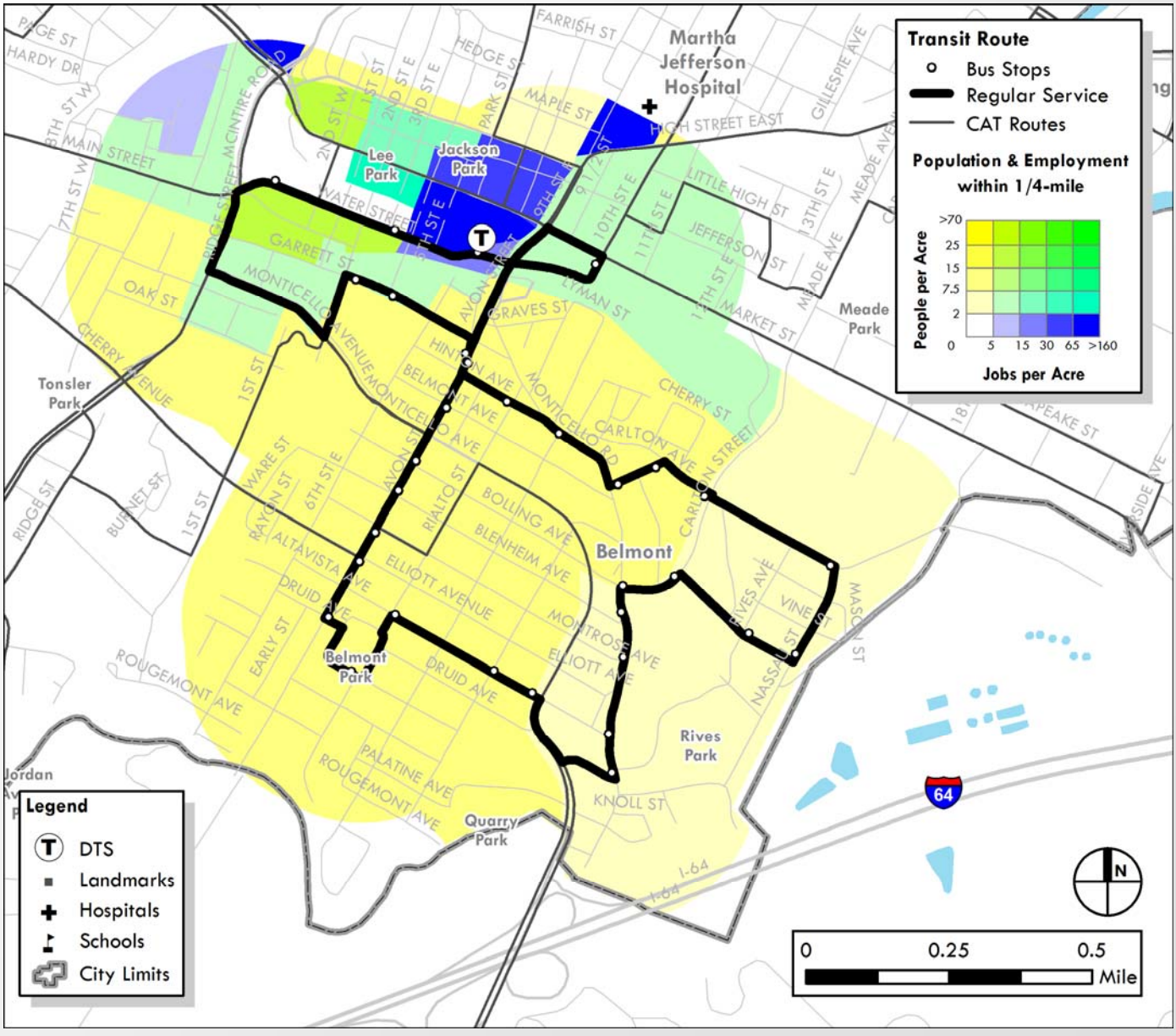


Charlottesville Area Transit – Route 21 – Belmont

Route 21 is the evening version of Route 3. It operates as a one-direction circulator route serving the southern portions of Charlottesville including the Belmont neighborhood. Route 21 also provides circulation along the southern perimeter of the pedestrian mall and downtown's southern neighborhoods on its outbound trip via Water Street, Ridge Street, Monticello Avenue, 2nd Street and Garrett Street.

Of the 17 routes in the CAT system, Route 21 ranks in the lowest quartile of performance on weekdays and on Saturdays.

Route 21	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 p.m. - 11:30 p.m.		6:45 p.m. - 11:30 p.m.	
Frequency (Eve)	30		30	
Cycle Time (min)	30		30	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	10		10	
Daily Revenue-Hours	5		5	
Daily Revenue-Miles	49		49	
Peak Buses	1.0		1.0	
Route Productivity				
Boardings (Rank)	42	(15)	21	(15)
Riders/Rev.-Hr. (Rank)	8.4	(16)	4.2	(15)
Riders/Rev.-Mi. (Rank)	0.9	(15)	0.4	(15)
Riders/Trip (Rank)	4.2	(16)	2.1	(15)



Description of Existing Alignment

Route 21 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route deviates north via 2nd Street and Garrett Street before turning south on Avon Street and then east on Hinton Avenue. Route 21 continues east into Monticello Road before turning left on Bainbridge Street and right on Carlton Avenue. The circulation continues via Nassau Street, Hampton Street and Carlton Road. At Monticello Road, Route 21 heads south and then west on Druid Avenue. The route then begins the return trip to DTS through Belmont Park by turning right on Monticello Avenue, left on Alta Vista Avenue, left on Rialto Street, right on Stonehenge Avenue, left on Druid Avenue and right on Avon Street. The final approach to DTS is made by turning east on Market Street, south on 10th Street and west on Water Street.

Route 21 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused. There are also some smaller neighborhood-oriented businesses and light industrial uses scattered along the alignment. Route 21 is the closest route to CAT's operating facility, which is more than one-half mile from the nearest bus stop. Major destinations along Route 21 include:

- Piedmont Housing Alliance
- ACAC Fitness & Wellness
- Friendship Court
- Virginia Industries for the Blind
- Worksource Enterprises
- Sunrise Trailer Court
- Belmont Park

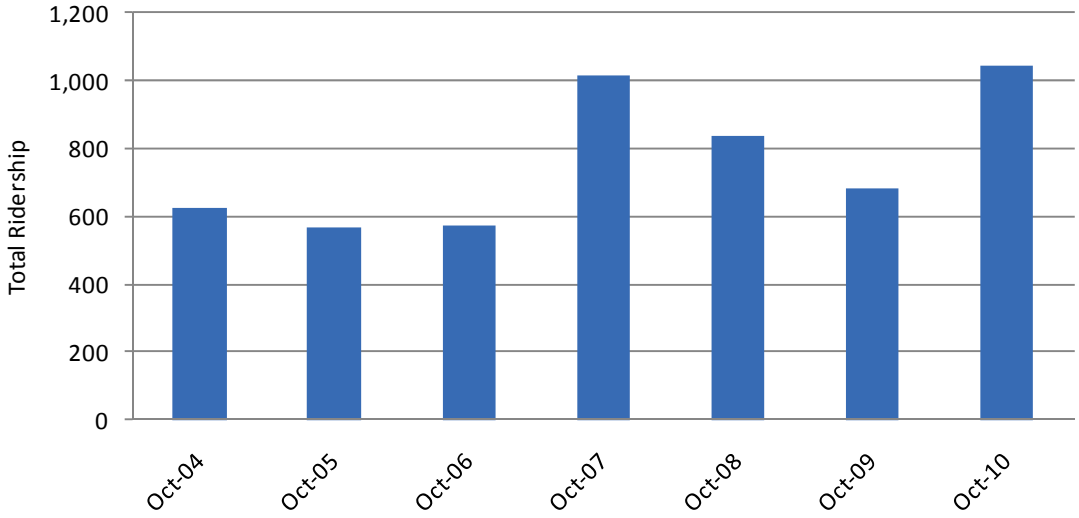
Key Route Issues and Observations

- *Alignment* – Route 21 is comprised of two one-way loops, configured in a "figure-eight" alignment. Part of this alignment is forced by the placement of the DTS and the need to circulate around the perimeter of the pedestrian mall to return east. The larger loop along the southern portion of the alignment serves most of Hinton Avenue, Carlton Avenue, Monticello Road and Avon Street. However, the one-way circulation forces passengers to ride the entire circuit should they use transit for their departing and returning trip.
- *Stops* – Bus stops along Route 21 appear to be adequately spaced every two to three blocks through the downtown circulator alignment. As the route enters the Belmont circulation, stops are much more closely spaced, particularly along Avon Street.
- *Schedule/Span of Service* – Route 21 operates Monday through Saturday from 6:45 p.m. until 11:30 p.m. (the last scheduled trip departs DTS at 11:15 p.m.) at 30-minute frequency. Daytime service along all of Route 21's alignment is provided by Route 3. Sunday service is not offered.
- *Cycle/Layover Times* – Route 21 has a 30-minute cycle time and is interlined with Route 22 at the DTS. There are 27 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure as Route 22.
- *Route Transfers* – Route 21 connects with all CAT evening routes (except Route 5) at the DTS. Route 21 also intersects with Route 23 on Monticello Avenue.

Historical Ridership Characteristics

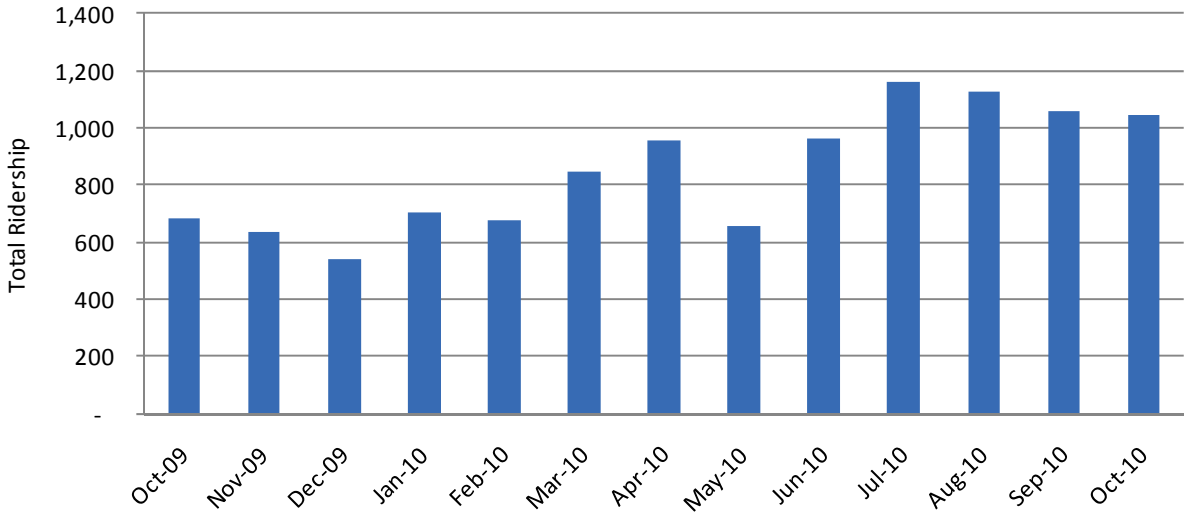
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 21 has maintained consistent ridership levels up until 2007. In 2007, ridership increased dramatically, began a decline and then returned to similar levels in 2010.

Year by Year October Ridership (2004 – 2010)



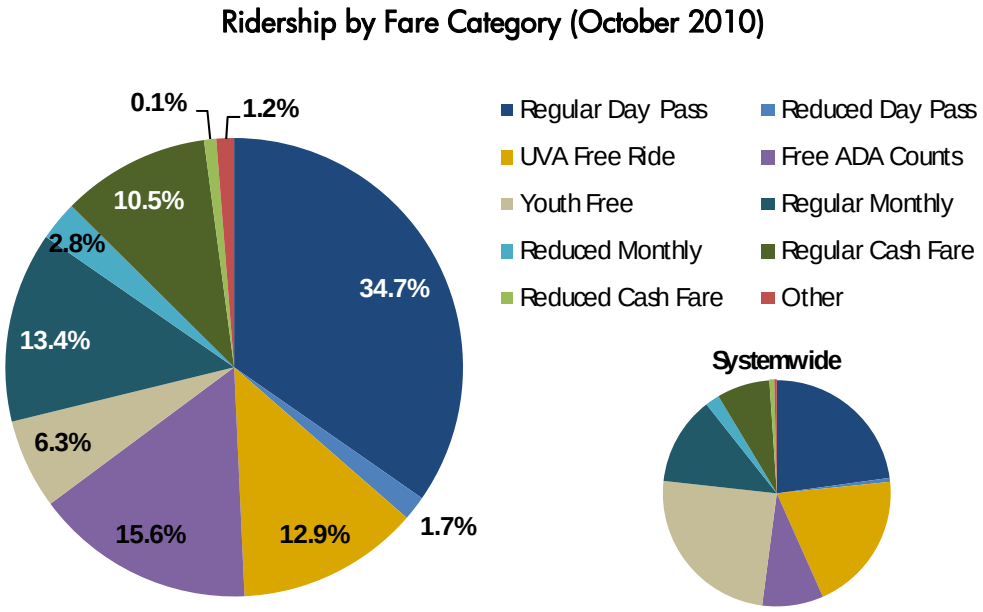
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. For the most part, ridership is consistent from month to month. October 2009 carried the highest number of riders but this trend did not hold true in October 2010. The lowest ridership was recorded in May 2010.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Passes generated the highest number of riders (34.7%). Free ADA riders represented the next largest group (15.6%) followed by Regular-Fare Monthly Passes (13.4%) and UVA riders (12.9%). Regular Cash Fare riders (10.5%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 21 are as follows:

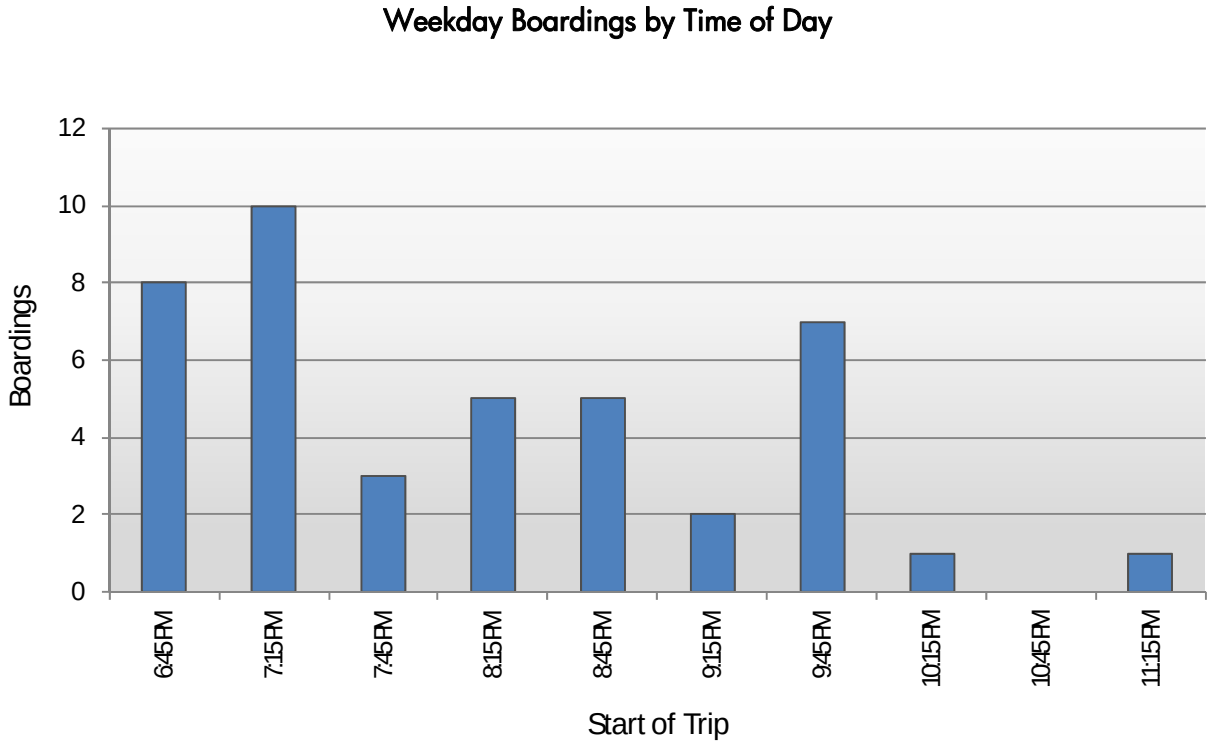
Route 21 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
n/a	n/a	n/a	42	42	21	n/a
Maximum Load						
n/a	n/a	n/a	9	9	9	n/a
Timepoints Reached On Time						
n/a	n/a	n/a	77%	77%	80%	n/a

On time defined as between 1 minute early and 5 minutes late

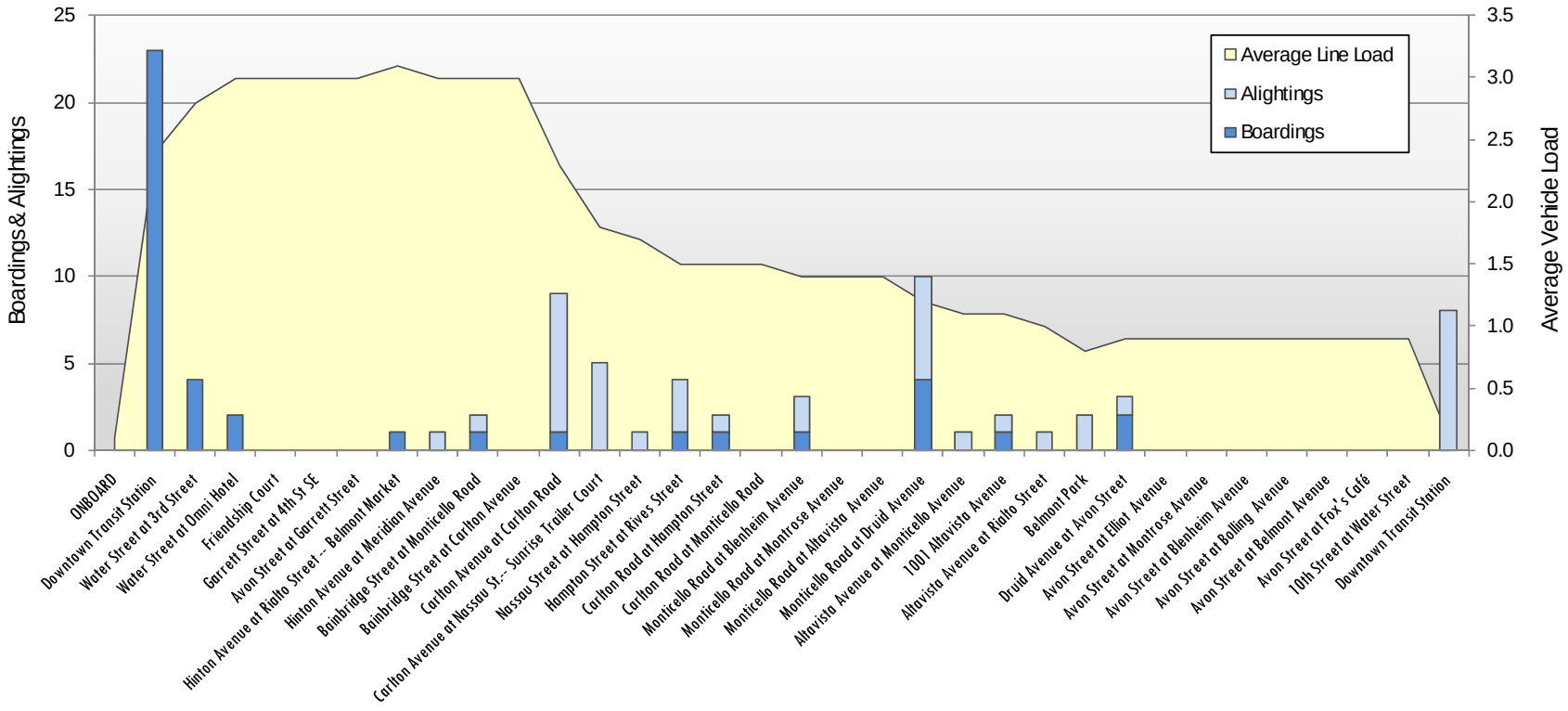
Weekday Observations

- Ridership on Route 21 is highest during the early evening hours. Trips after 10:00 p.m. were nearly unutilized.
- The maximum observed load was nine passengers.
- The 7:15 p.m. trip carried the most passengers followed by the 6:45 p.m. trip. The 10:15 and 11:15 p.m. trips (last trip of the night) carried only one passenger. The 10:45 p.m. trip had no riders.
- The DTS is the highest volume stop on Route 21. The stop at Monticello Road & Druid Avenue was the next strongest with Carlton Avenue & Carlton Road following closely. Stops along Avon Street saw no activity.
- On-time performance was met 77% of the time. All of the on-time performance infractions were attributed to early departures.

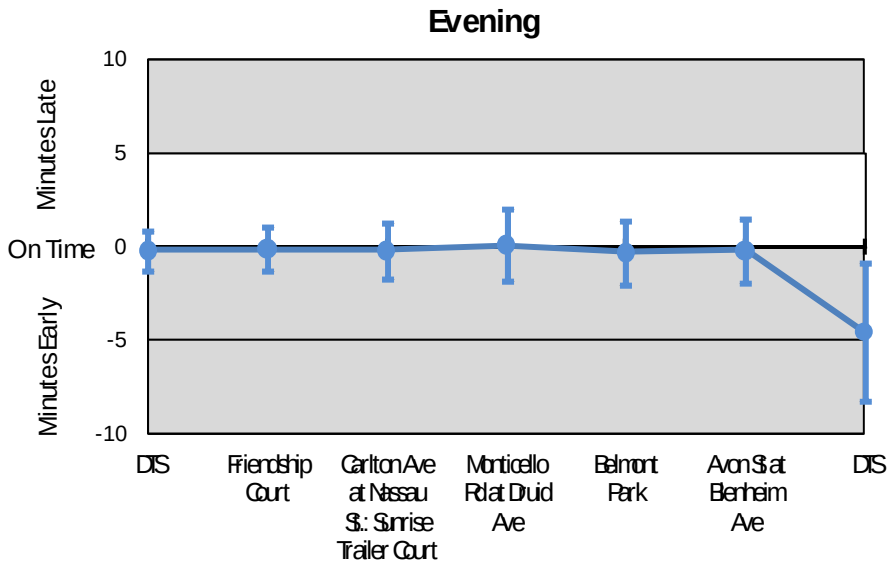

Weekday Boardings by Time of Day
Boardings
12
10
8
6
4
2
0
6:45PM
7:15PM
7:45PM
8:15PM
8:45PM
9:15PM
9:45PM
10:15PM
10:45PM
11:15PM
Start of Trip

Weekday Ridership Activity

Weekday Ridership by Stop and Average Line Loads



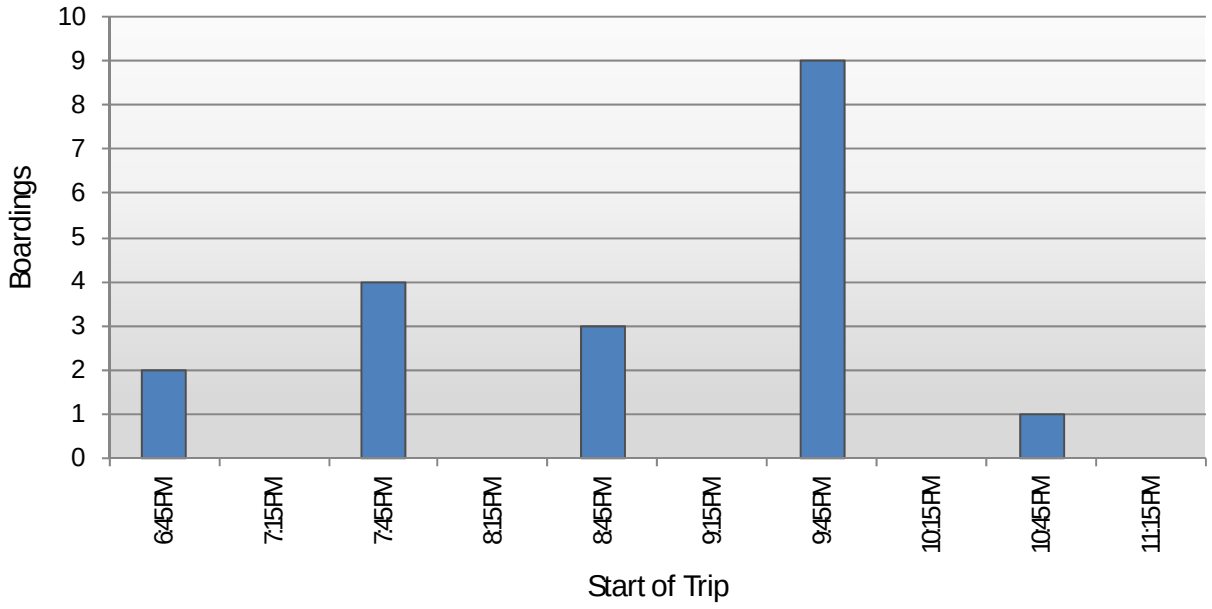
Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the evening was at 9:45 p.m. The 10:45 p.m. trip recorded the lowest number of riders. Due to a scheduling error during the ridecheck, the 7:15, 8:15, 9:15, 10:15 and 11:15 p.m. trips were not surveyed on Saturday.
- Based on the trips surveyed, Saturday trips carry 50% of the ridership levels drawn on weekdays. However, taking the missed trips into consideration, the assumption can be made that Saturday ridership levels are actually equitable to weekdays.
- The maximum load for Saturday trips was nine, the same as weekdays.
- Saturday trips were on-time 80% of the time. The 6:45 p.m. trip was 7-9 minutes late through most of its duration. All other trips were on-time.

Saturday Boardings by Time of Day

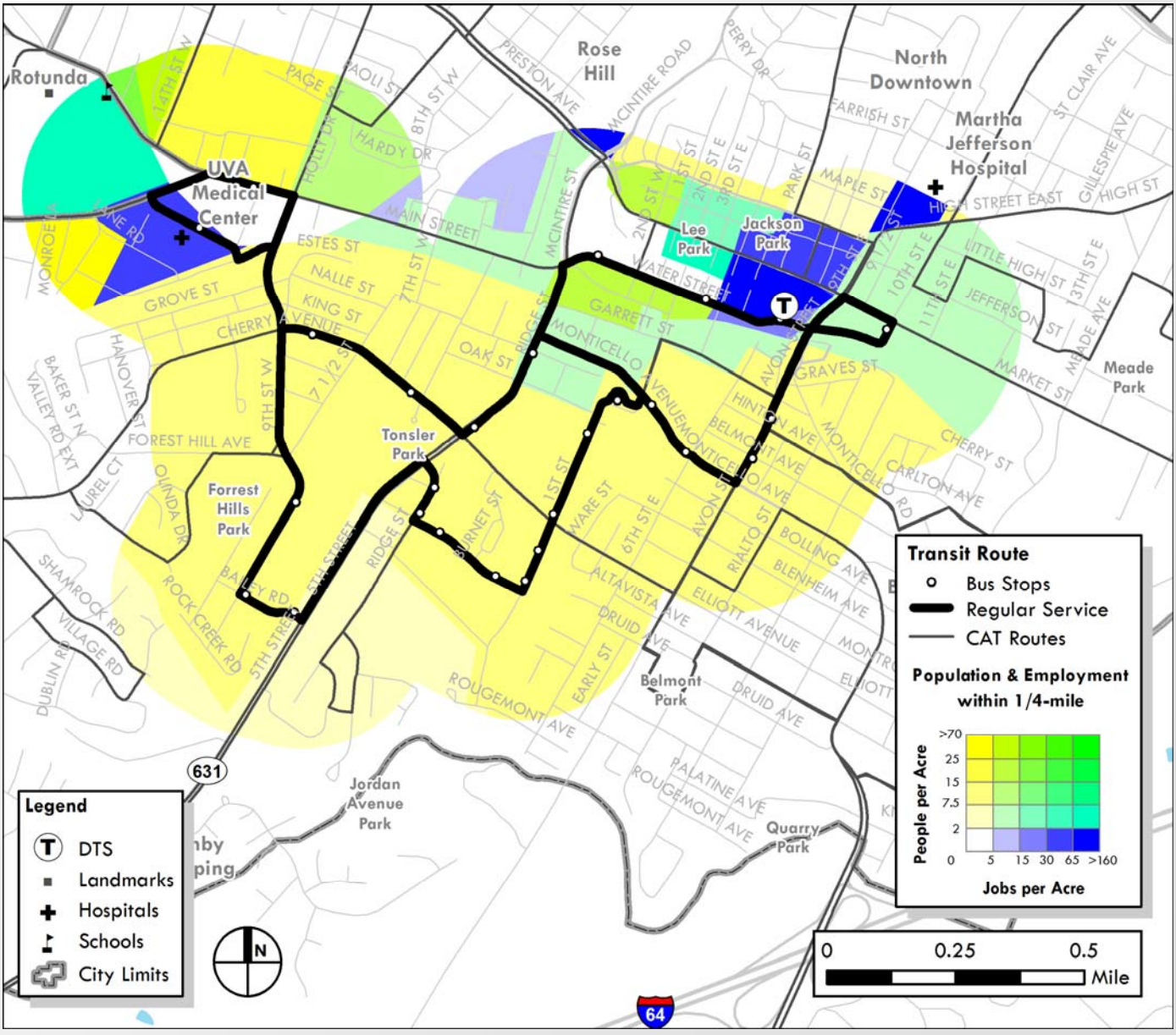


Charlottesville Area Transit – Route 22 – Prospect Avenue & UVA Hospital

Route 22 is an evening route that features segments of Routes 4 and 6. It operates as a one-direction circulator route serving the southwestern portions of Charlottesville including the University of Virginia Medical Center. Route 22 also provides circulation along the southern perimeter of the pedestrian mall on its outbound trip via Water Street, Ridge Street and Monticello Avenue.

Of the 17 routes in the CAT system, Route 22 ranks average in weekday performance and in the lowest quartile on Saturdays.

Route 22	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 p.m. - 11:30 p.m.		6:45 p.m. - 11:30 p.m.	
Frequency (Eve)	30		30	
Cycle Time (min)	30		30	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	10		10	
Daily Revenue-Hours	5		5	
Daily Revenue-Miles	56		56	
Peak Buses	1.0		1.0	
Route Productivity				
Boardings (Rank)	83	(13)	25	(13)
Riders/Rev.-Hr. (Rank)	16.6	(9)	5.0	**(14)**
Riders/Rev.-Mi. (Rank)	1.5	(9)	0.4	**(14)**
Riders/Trip (Rank)	8.3	(12)	2.5	**(14)**



Description of Existing Alignment

Route 22 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route turns south on 2nd Avenue and serves Crescent Hall before continuing south on 1st Avenue. At Lankford Avenue, Route 22 turns right and then right again on Ridge Street. Route 22 then turns left on 5th Street and travels south. At Bailey Road, the route turns right and heads to UVA Medical Center via Prospect Avenue, 9th Street, Roosevelt Brown Boulevard, Crispell Drive and Lee Street. After serving the hospital, Route 22 circles the block via Jefferson Park Avenue, West Main Street and Roosevelt Brown Boulevard, turning left on Cherry Avenue. From here, the route makes its way back to DTS via Ridge Street, Monticello Avenue, Avon Street, Market Street, 10th Street and Water Street.

Route 22 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused and UVA is more medically oriented in the area surrounding the hospital. There are also some smaller neighborhood-oriented businesses scattered along the Cherry Avenue portion of the alignment. Major destinations along Route 22 include:

- Piedmont Housing Alliance
- ACAC Fitness and Wellness
- Crescent Hall
- Blue Ridge Commons
- UVA Medical Center
- UVA Corner

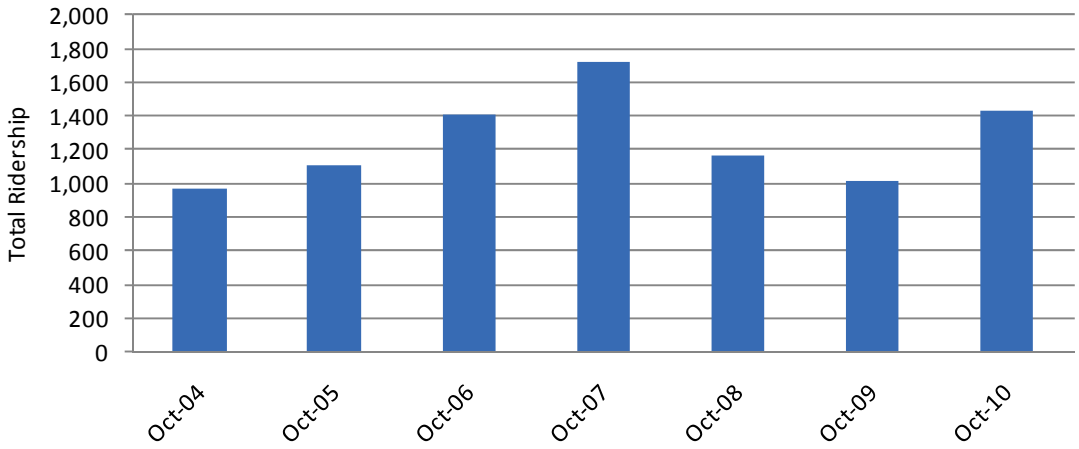
Key Route Issues and Observations

- *Alignment* – Route 22 is comprised of a large one-way loop. Part of this alignment is forced by the placement of the DTS. However, the majority of the loop is designed to provide as much service coverage to as many people as possible. This one-way circulation forces passengers to ride the entire circuit should they require transit for both their departing and returning trip.
- *Stops* – Bus stops along Route 22 appear to be adequately spaced every two to three blocks through the downtown circulator alignment. Spacing is much more dense along the 1st Street, Lankford Avenue and Ridge Street segments. In contrast, stops are more widely spaced between Forest Hills and UVA Medical Center.
- *Schedule/Span of Service* – Route 22 operates Monday through Saturday from 6:45 p.m. until 11:30 p.m. (the last scheduled trip departs DTS at 11:15 p.m.) at 30-minute frequency. Daytime service along portions of Route 22's alignment is provided by Routes 4 and 6. Sunday service is not offered.
- *Cycle/Layover Times* – Route 22 has a 30-minute cycle time and is interlined with Route 21 at the DTS. There are 27 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure as Route 21.
- *Route Transfers* – Route 22 connects with all CAT evening routes (except Route 5) at the DTS. Route 22 also intersects with Route 7 and the Trolley on West Main Street.

Historical Ridership Characteristics

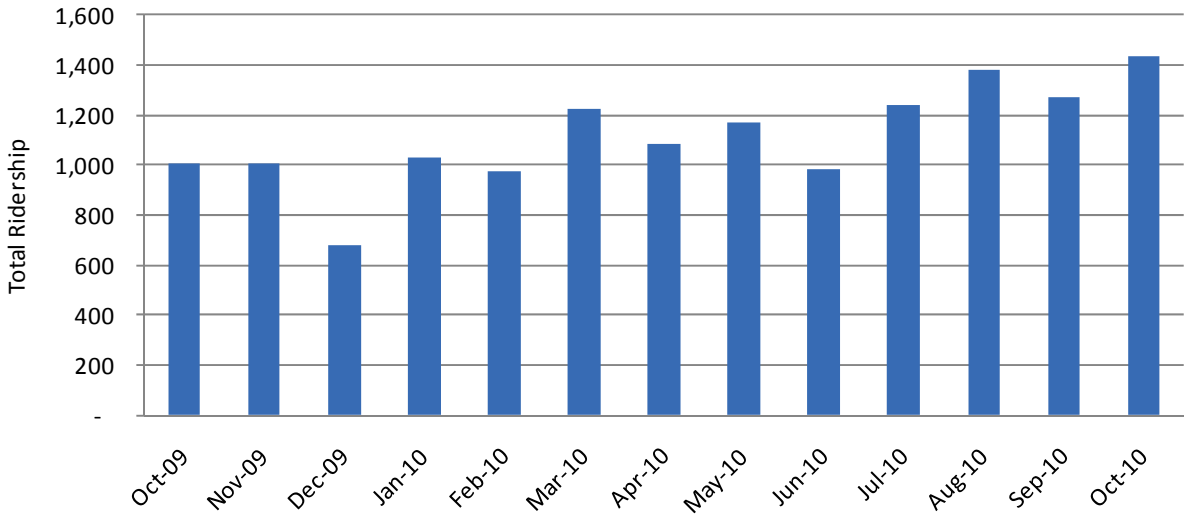
A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 22 has experienced ridership increases up until 2007. In 2007, ridership dropped for two years. However, 2010 ridership appears to be recovering.

Year by Year October Ridership (2004 – 2010)



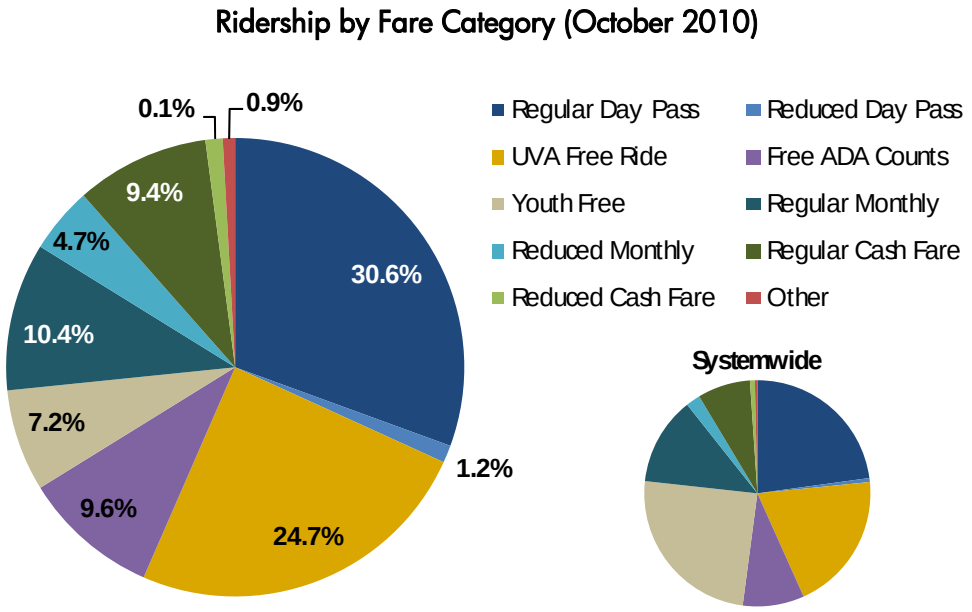
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Ridership appears to be lowest in the winter months and highest in the spring and summer months.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Passes generated the highest number of riders (30.6%). UVA Riders represented the next largest group (24.7%). Regular-Fare Monthly Passes (10.4%), Free ADA Riders (9.6%) and Regular Cash Fare riders (9.4%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 22 are as follows:

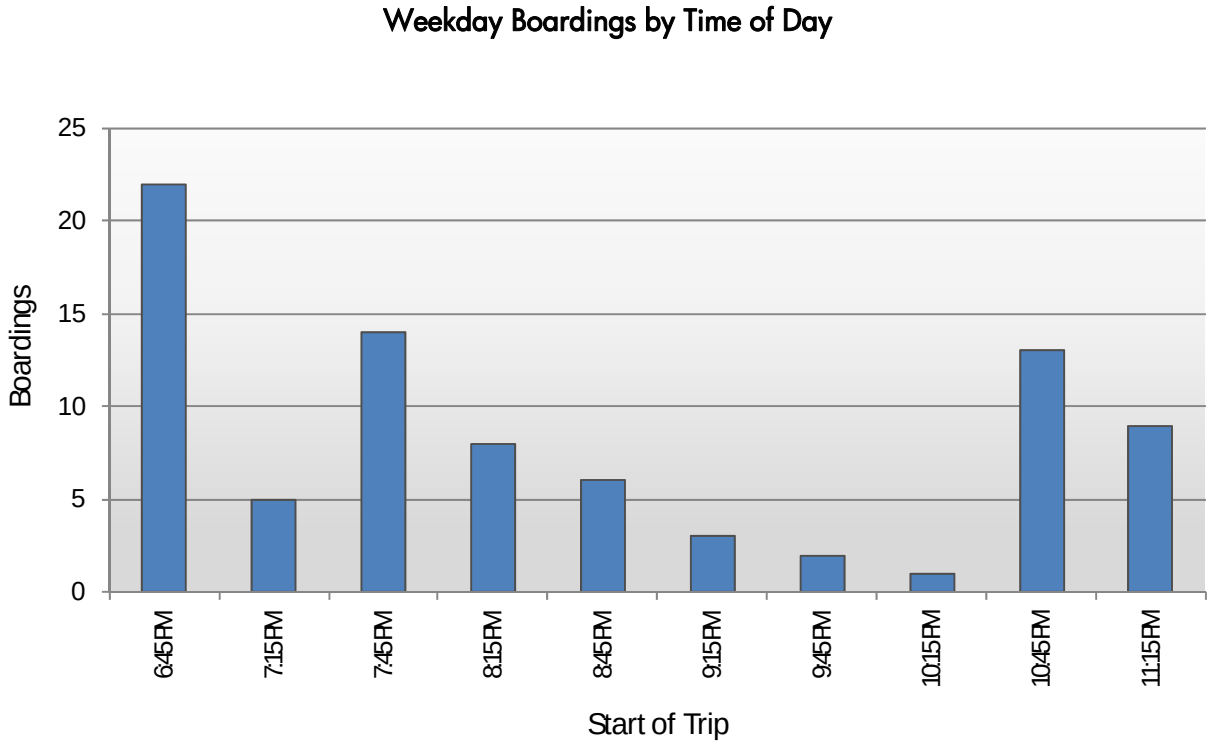
Route 22 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
n/a	n/a	n/a	83	83	25	n/a
Maximum Load						
n/a	n/a	n/a	14	14	9	n/a
Timepoints Reached On Time						
n/a	n/a	n/a	81%	81%	91%	n/a

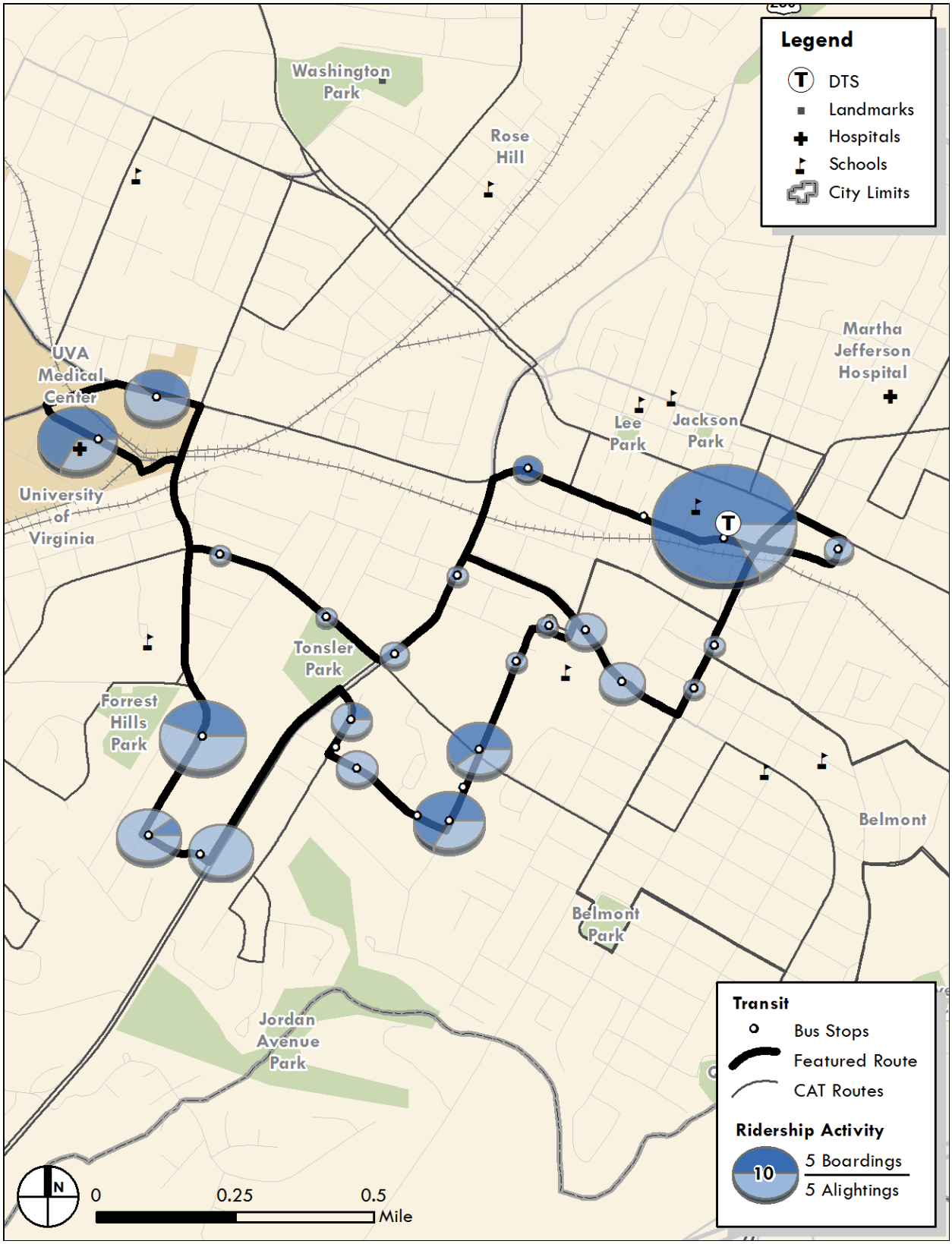
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

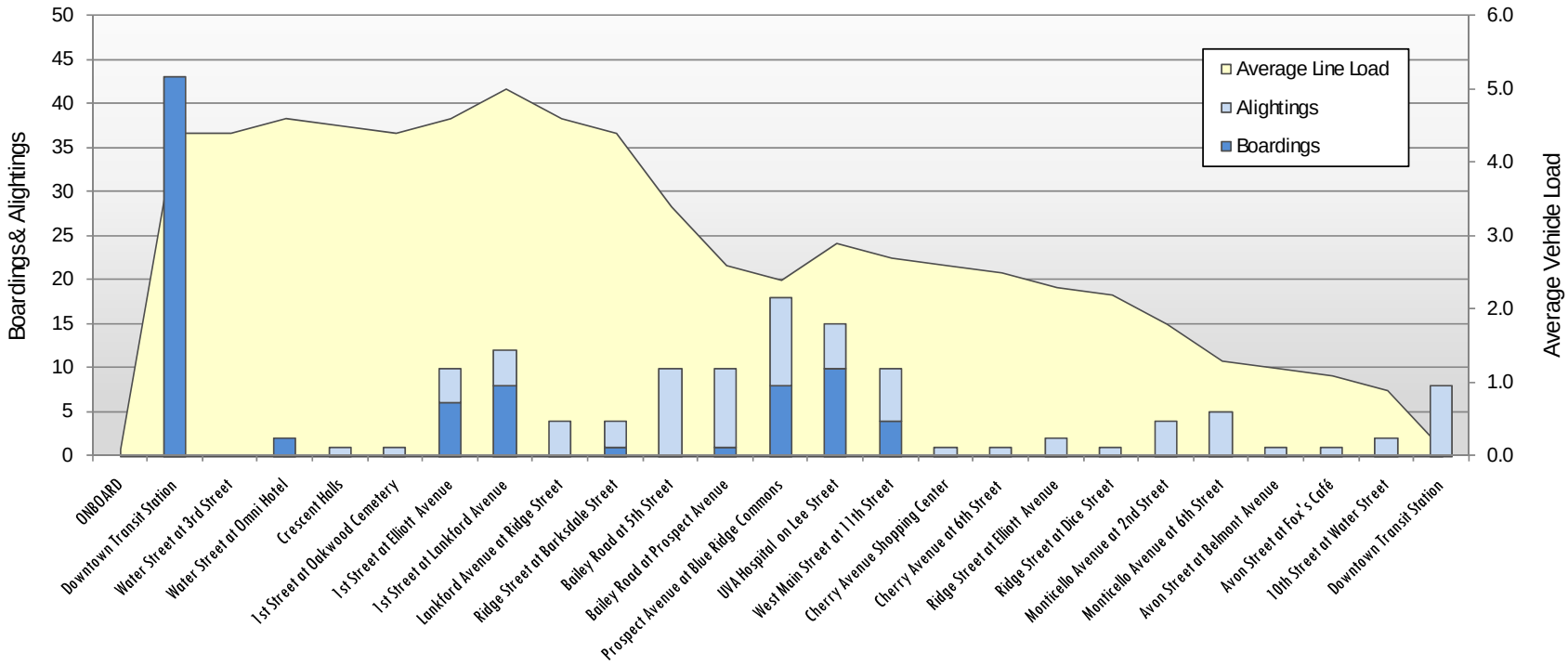
- Ridership on Route 22 is highest during the early evening hours. Trips after 10:30 p.m. were also well utilized, most likely attributed to hospital employees.
- The maximum observed load was 14 passengers.
- The 6:45 p.m. trip carried the most passengers followed by the 7:45 p.m. trip. The 10:15 trip carried only one passenger. The 10:45 and 11:15 p.m. trips carried significant numbers as well.
- The DTS is the highest volume stop on Route 21. The stops at Blue Ridge Commons and UVA Hospital were the next strongest.
- On-time performance was met 81% of the time. All of the on-time performance infractions were attributed to early departures, particularly toward the end of the route.


Weekday Boardings by Time of Day
Boardings
25
20
15
10
5
0
6:45PM
7:15PM
7:45PM
8:15PM
8:45PM
9:15PM
9:45PM
10:15PM
10:45PM
11:15PM
Start of Trip

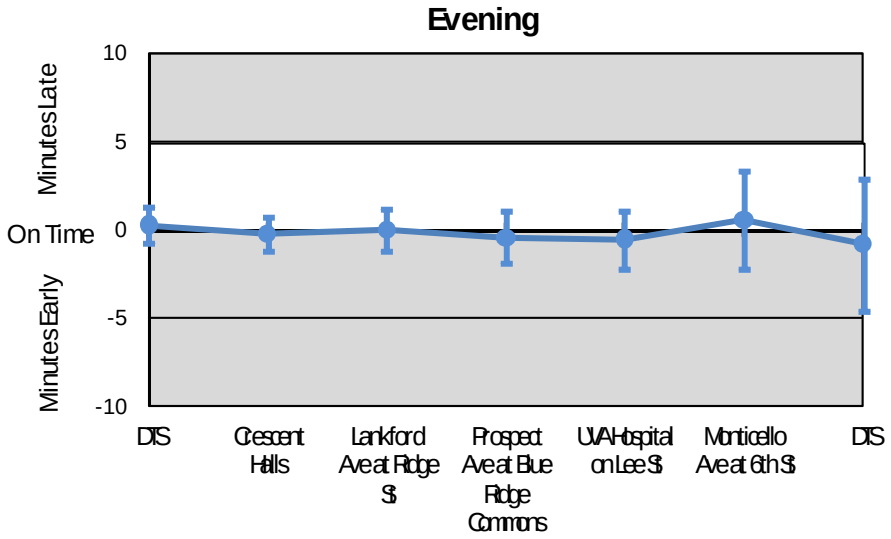
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads

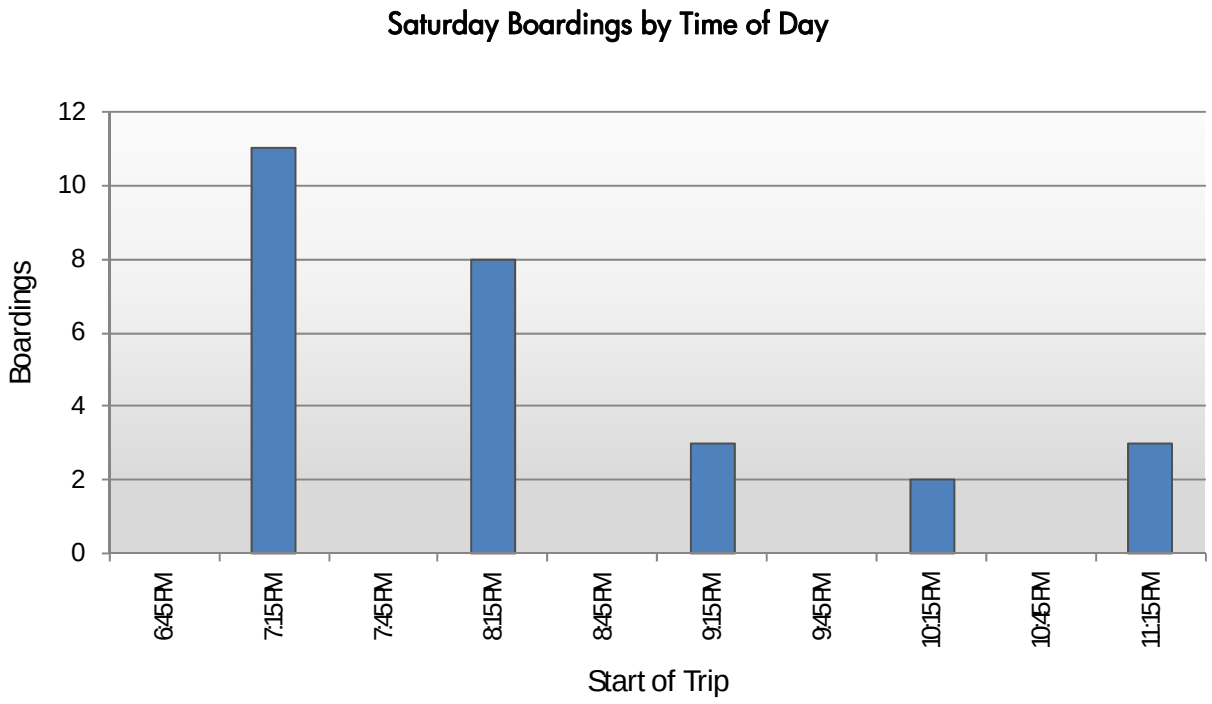


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the evening was at 7:15 p.m. The 10:15 p.m. trip recorded the lowest number of riders. Due to a scheduling error during the ridecheck, the 6:45, 7:45, 8:45, 9:45, and 11:45 p.m. trips were not surveyed on Saturday.
- Based on the trips surveyed, Saturday trips carry 30% of the ridership levels drawn on weekdays. However, taking the missed trips into consideration, the assumption can be made that Saturday ridership levels are actually closer to 60% of weekdays.
- The maximum load for Saturday trips was nine.
- Saturday trips were on-time 91% of the time.

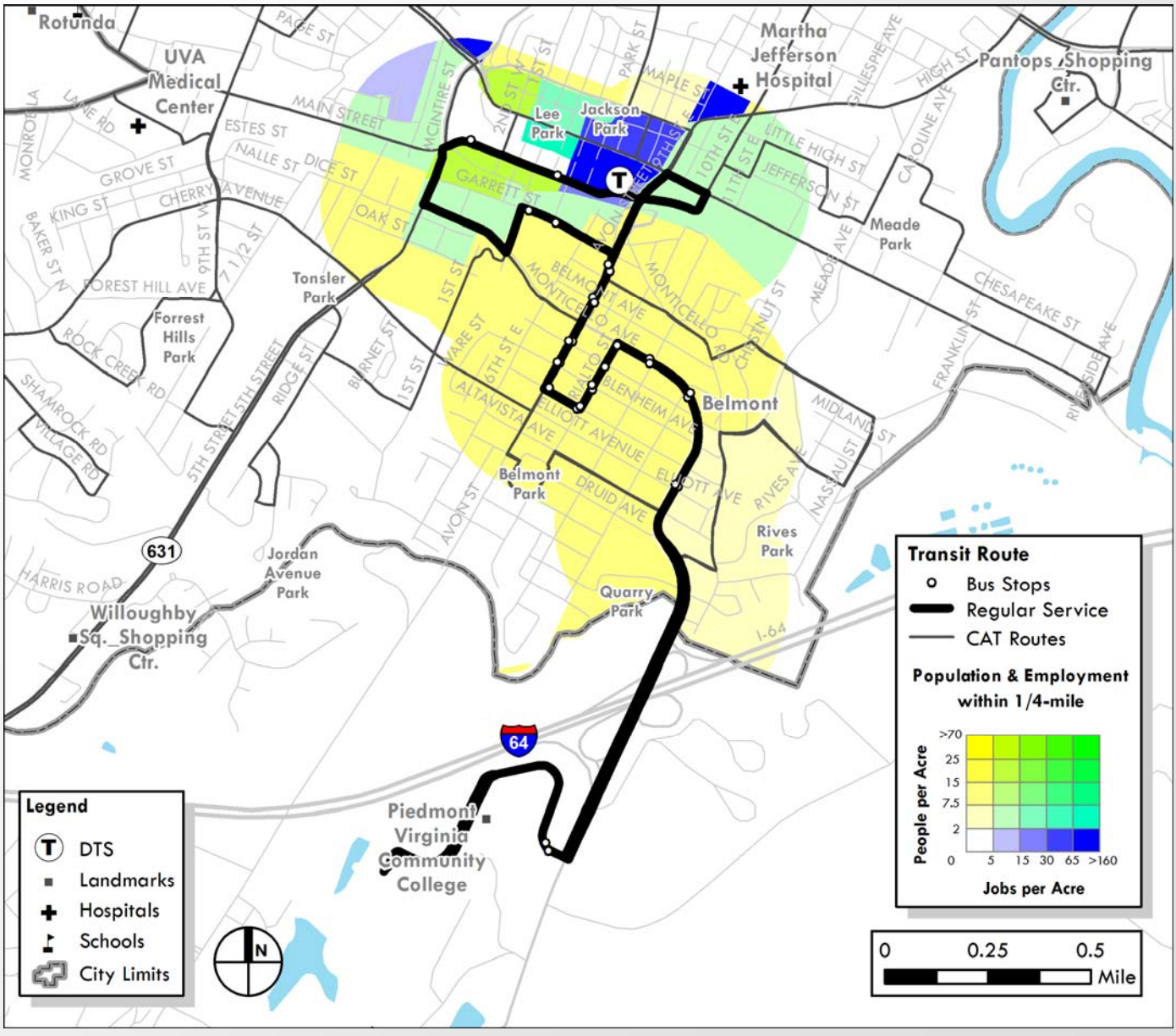


Charlottesville Area Transit – Route 23 – PVCC

Route 23 is the evening version of Route 1B. It operates primarily as a linear route connecting downtown Charlottesville with Piedmont Virginia Community College (PVCC) via the Monticello Avenue corridor. Route 23 also provides circulation along the southern perimeter of the pedestrian mall and downtown's southern neighborhoods on its outbound trip via Water Street, Ridge Street, Monticello Avenue, 2nd Street and Garrett Street.

Of the 17 routes in the CAT system, Route 23 falls in the lowest quartile in weekday and Saturday performance.

Route 23	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	6:45 p.m. - 11:30 p.m.		6:45 p.m. - 11:12 p.m.	
Frequency (Eve)	60		60	
Cycle Time (min)	30		30	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	5		5	
Daily Revenue-Hours	2.5		2.5	
Daily Revenue-Miles	38		38	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	23	(16)	9	(17)
Riders/Rev.-Hr. (Rank)	9.2	(15)	3.6	(17)
Riders/Rev.-Mi. (Rank)	0.6	(16)	0.2	(17)
Riders/Trip (Rank)	4.6	(15)	1.8	(17)



Description of Existing Alignment

Route 23 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge Street and south to Monticello Avenue. On Monticello Avenue, the route zig-zags through south Charlottesville via 2nd Street, Garrett Street, Avon Street, Montrose Avenue and Rialto Street before continuing the southbound journey to PVCC. The college is accessed via College Avenue where the bus serves three stops before reaching the end-of-line. The return trip is operated in the reverse of the outbound trip until reaching Avon Street. At this point, Route 23 continues north to the DTS via Market Street, 10th Street and Water Street.

Route 23 primarily serves residential interests throughout the length of its route. Downtown is more commercially focused and the end-of-line at PVCC is educational. Major destinations along Route 23 include:

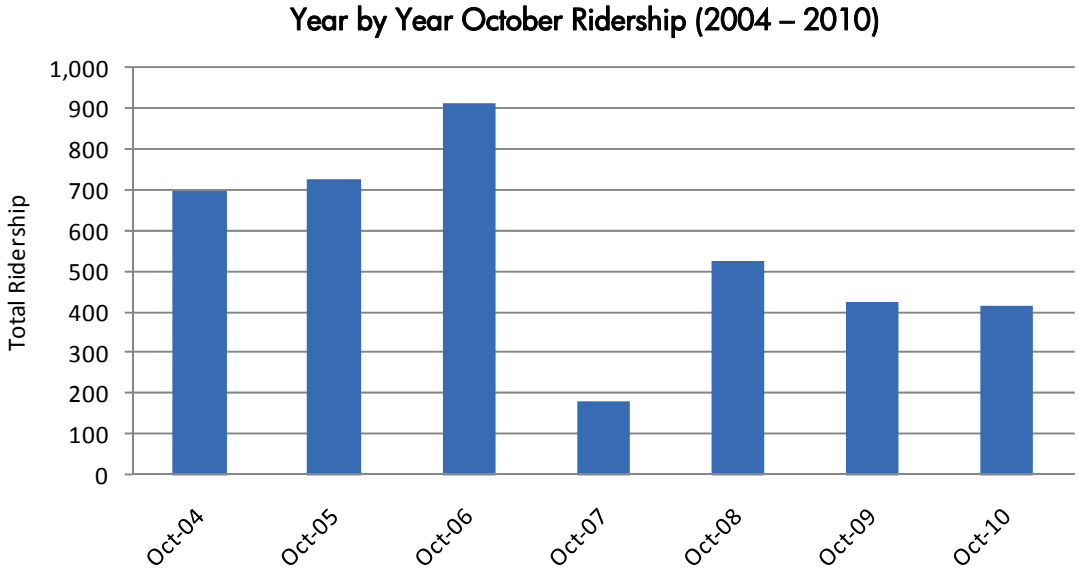
- Piedmont Housing Alliance
- ACAC Fitness & Wellness
- Friendship Court
- Piedmont House
- Piedmont Virginia Community College (PVCC)

Key Route Issues and Observations

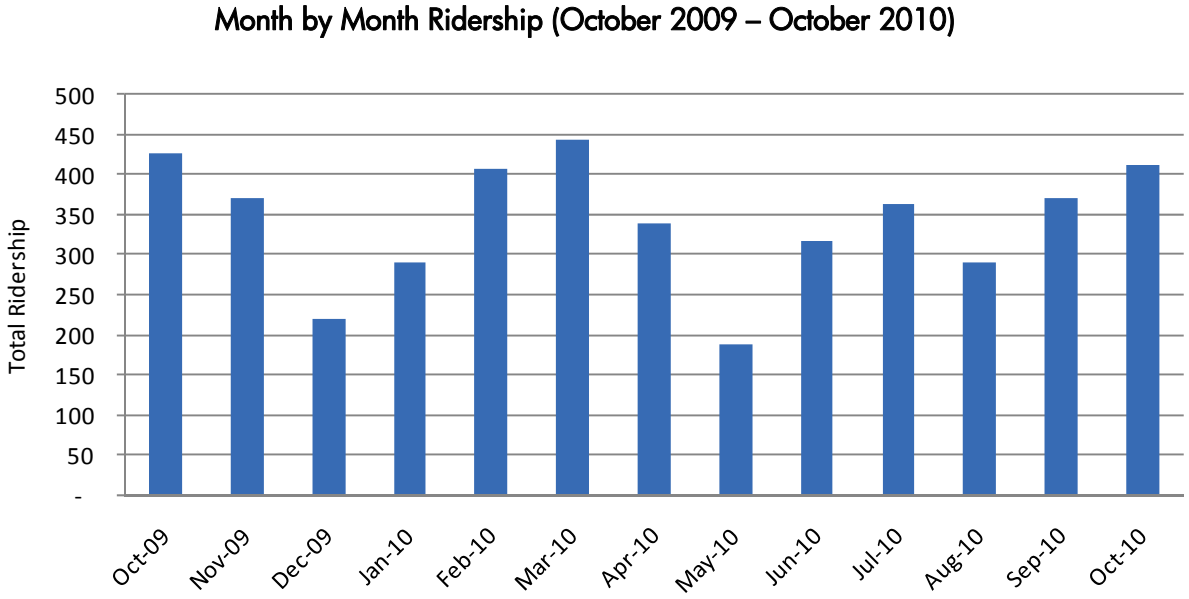
- *Alignment* – Route 23 is comprised of a one-way loop, attached to a linear alignment that primarily serves the Monticello Avenue corridor. The one-way-loop alignment is forced by the placement of the DTS and the need to circulate along the southern perimeter of the pedestrian mall to return east. The route also features a zig-zag movement along the north and south sides of Monticello Avenue, offering penetration 2-3 blocks into the neighborhoods. Once this movement is complete, the route is very direct to PVCC.
- *Stops* – Bus stops along Route 23 are inconsistently spaced but this may be more indicative of demand. Stops in the south Charlottesville neighborhoods are spaced the closest with some occurring once per block. Stops toward the outer end of the alignment are more sparse.
- *Schedule/Span of Service* – Route 23 operates Monday through Saturday from 6:45 p.m. until 11:12 p.m. (the last scheduled trip departs DTS at 10:45 p.m.) at 60-minute frequency. Daytime service along all of Route 23's alignment is provided by Route 1B. Sunday service is not offered.
- *Cycle/Layover Times* – Route 23 has a 30-minute cycle time and requires a portion of a bus to operate at 60-minute frequency. As such, it is interlined with Route 24 at the DTS. There are 16 minutes of scheduled running time with 11 minutes of scheduled recovery time at PVCC and another three minutes of scheduled recovery time at the DTS prior to the next departure as Route 24.
- *Route Transfers* – Route 23 connects with all CAT evening routes (except Route 5) at the DTS. Route 23 also intersects with Route 21 on Monticello Avenue.

Historical Ridership Characteristics

A year-by-year comparison of October ridership from 2004 through 2010 is presented in the figure below. Ridership on Route 23 showed slow growth up until 2007. In 2007, ridership decreased dramatically and partially recovered in 2008.

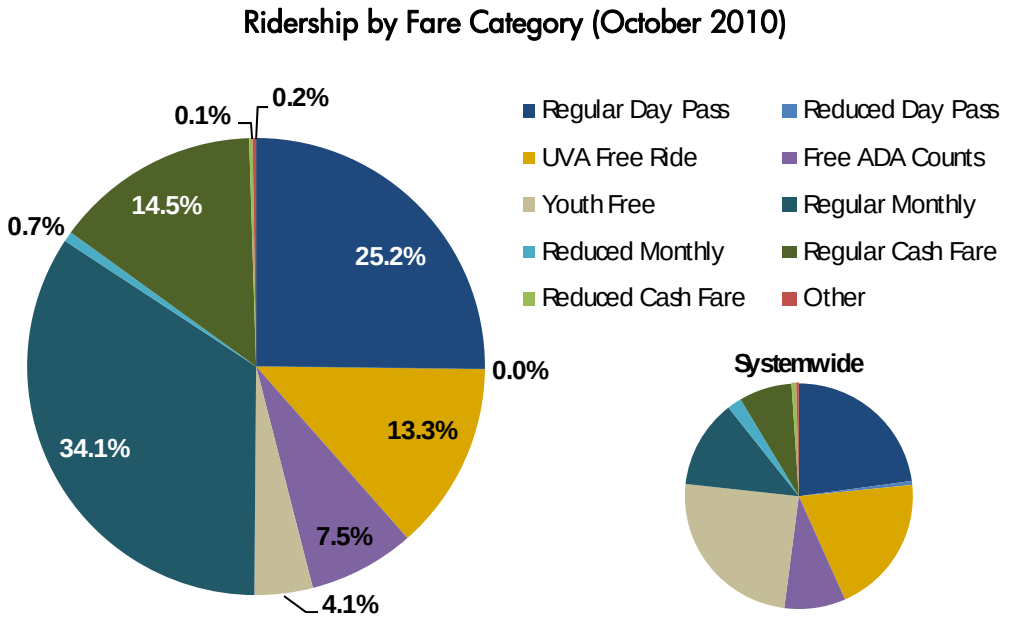


A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Ridership varies from month to month with December and May being two of the lowest. These trends may be indicative to changes in the PVCC class schedule.



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Monthly Passes generated the highest number of riders (34.1%). Regular-Fare Day Passes represented the next largest group (25.2%). Regular Cash Fare riders (14.5%) and UVA Riders (13.3%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 23 are as follows:

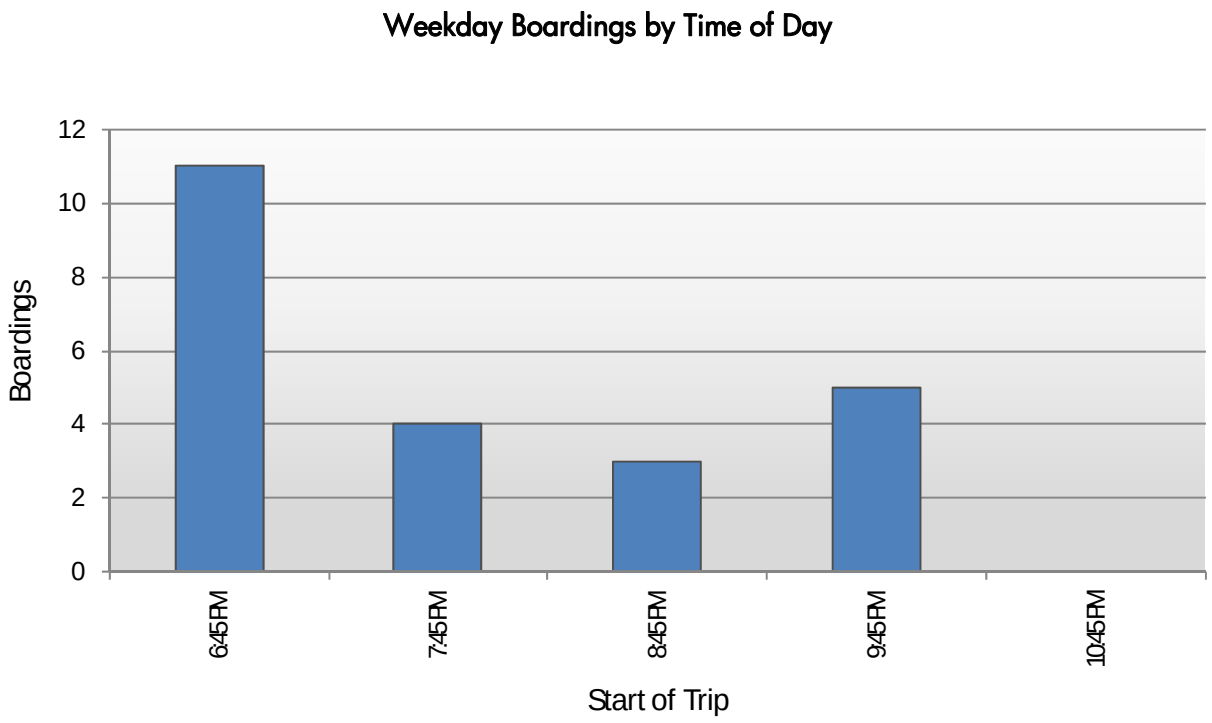
Route 23 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
n/a	n/a	n/a	23	23	9	n/a
Maximum Load						
n/a	n/a	n/a	7	7	5	n/a
Timepoints Reached On Time						
n/a	n/a	n/a	100%	100%	100%	n/a

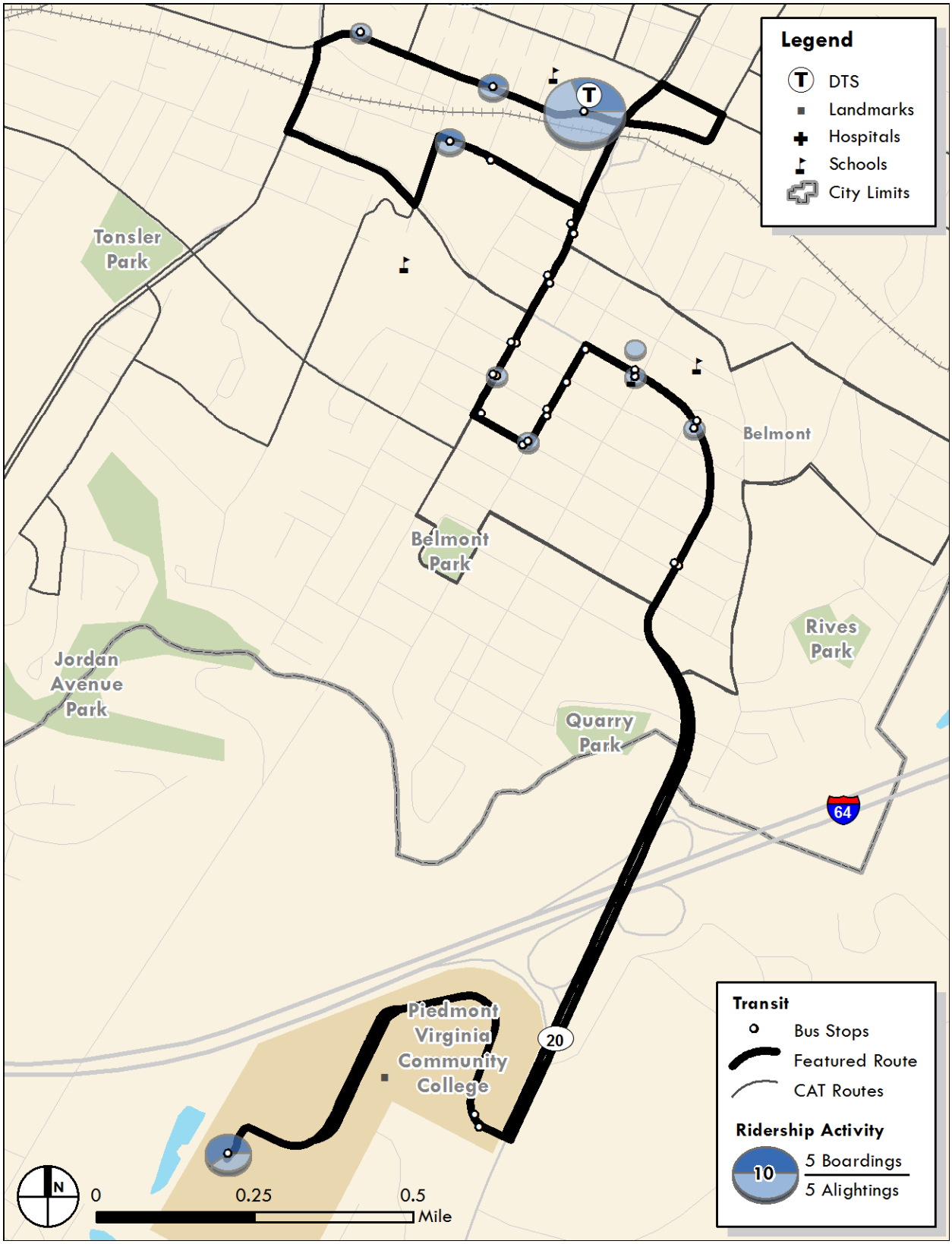
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

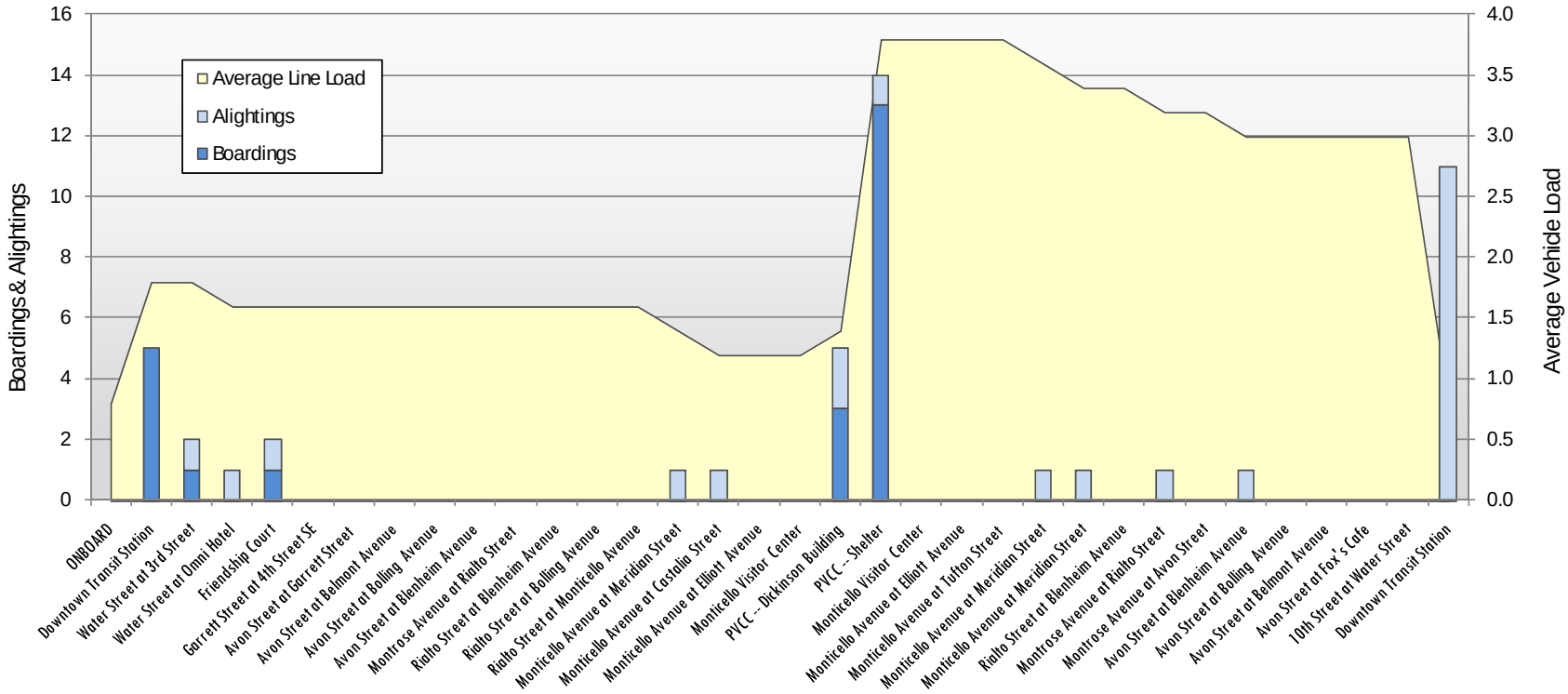
- Ridership on Route 23 is highest during the early evening hours.
- The maximum observed load was seven passengers.
- The 6:45 p.m. trip carried the most passengers followed by the 9:45 p.m. trip. The 10:45 p.m. trip had no riders.
- The DTS is the highest volume stop on Route 23. The PVCC stops were the next most utilized. The remaining stops saw little to no activity.
- On-time performance was met 100% of the time.


Weekday Boardings by Time of Day
Boardings
12
10
8
6
4
2
0
6:45PM
7:45PM
8:45PM
9:45PM
10:45PM
Start of Trip

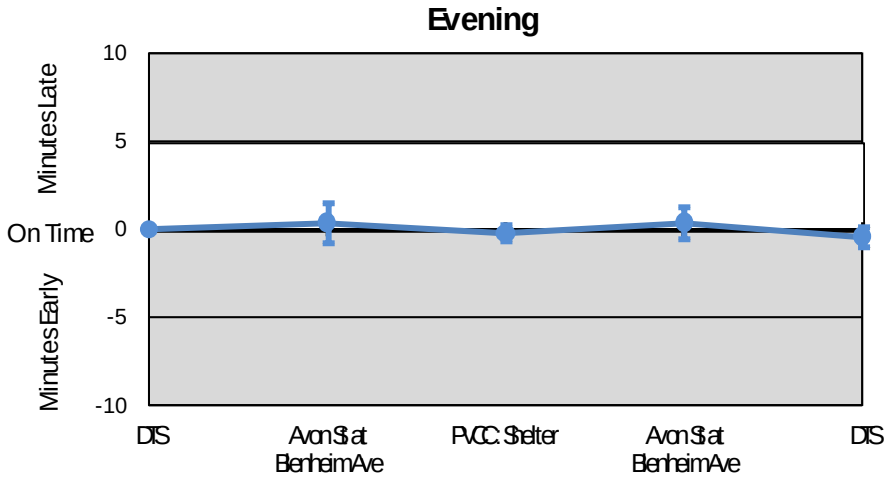
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads

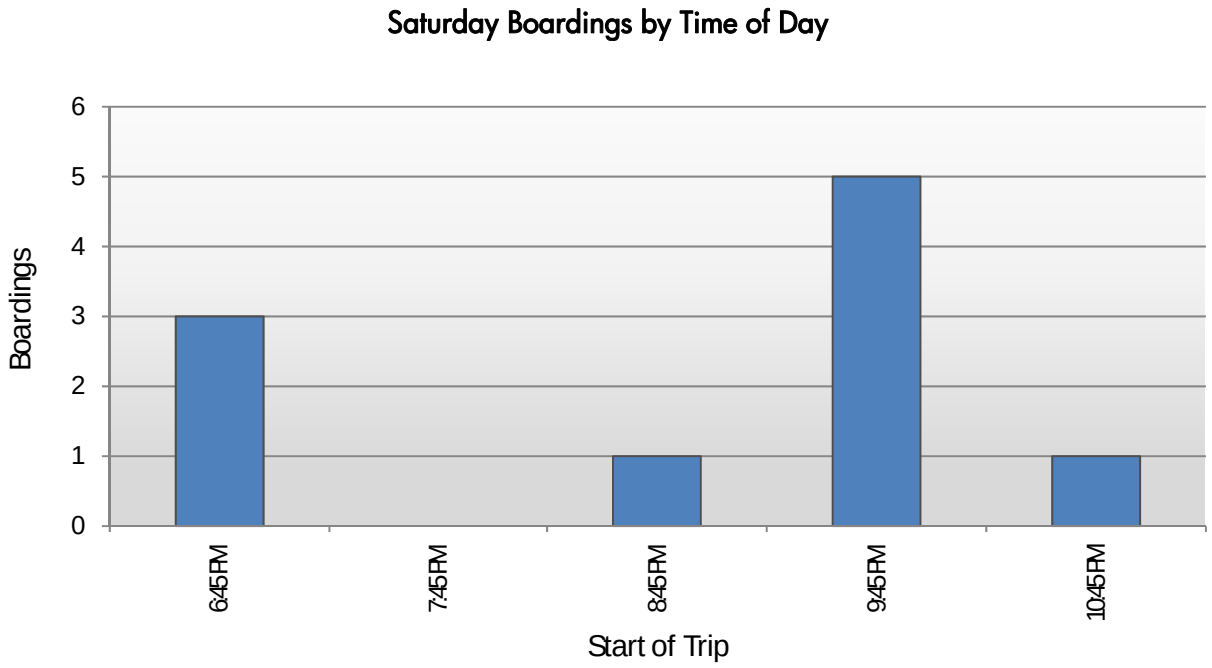


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trip of the evening was at 9:45 p.m. followed by the 6:45 p.m. trip. The 8:45 and 10:45 p.m. trips only carried one rider. The 7:45 p.m. trip had no riders.
- Saturday trips carry 39% of the ridership levels drawn on weekdays.
- The maximum load for Saturday trips was five.
- Saturday trips were on-time 100% of the time.

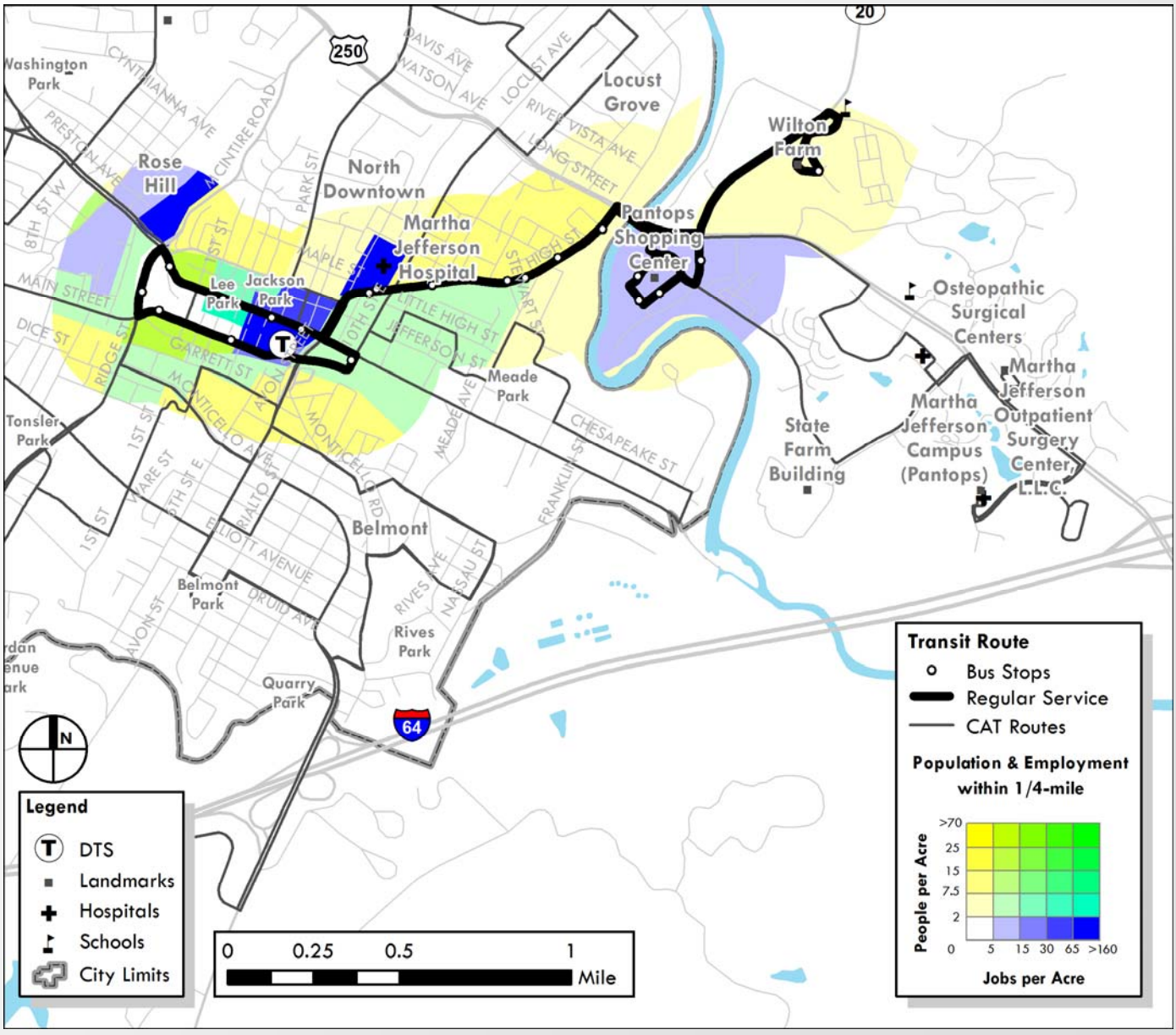


Charlottesville Area Transit – Route 24 – Pantops

Route 24 is the evening version of a truncated Route 10. It operates primarily as a linear route connecting downtown Charlottesville with Wilton Farm Apartments via Martha Jefferson Hospital and Pantops Shopping Center. Route 24 also provides circulation along the perimeter of the pedestrian mall on its outbound trip via Water Street, McIntyre Street, Preston Avenue and Market Street. Operating costs for Route 24 are funded by Albemarle County

Of the 17 routes in the CAT system, Route 24 falls in the lowest quartile in weekday performance. On Saturdays, Route 24's performance is below-average.

Route 24	Full Service Weekday		Saturday	
Route Characteristics				
Hours of Operation	7:15 p.m. - 11:35 p.m.		7:15 p.m. - 11:35 p.m.	
Frequency (Eve)	60		60	
Cycle Time (min)	30		30	
Layover Time (min)	3		3	
Route Statistics				
Round Trips	5		5	
Daily Revenue-Hours	2.5		2.5	
Daily Revenue-Miles	27.5		27.5	
Peak Buses	0.5		0.5	
Route Productivity				
Boardings (Rank)	12	(17)	18	(16)
Riders/Rev.-Hr. (Rank)	4.8	(17)	7.2	(11)
Riders/Rev.-Mi. (Rank)	0.4	(17)	0.7	(12)
Riders/Trip (Rank)	2.4	(17)	3.6	(12)



Description of Existing Alignment

Route 24 begins at the Downtown Transit Station (DTS) on Water Street and travels west to Ridge McIntyre Road, north to Preston Avenue and then east on Market Street. At 9th Street, the route turns north and then bears right onto High Street followed by a right turn onto Long Street. Route 24 continues on Long Street (US 250) and turns into the Pantops Shopping Center. After serving the shopping center, Route 24 crosses US 250 and continues to Wilton Farm Apartments via Stony Point Road and Fontana Drive. From the apartments, Route 24 returns to Pantops Shopping Center and then returns to DTS via US 250, High Street, 9th Street, Market Street, 10th Street and Water Street.

Route 24 primarily serves commercial and retail interests with some residential scattered along the alignment. Medical and professional services are prevalent given the proximity to Martha Jefferson Hospital. Major destinations along Route 24 include:

- Federal Courthouse
- Charlottesville City Hall
- Martha Jefferson Hospital
- Pantops Shopping Center
- Wilton Farm Apartments

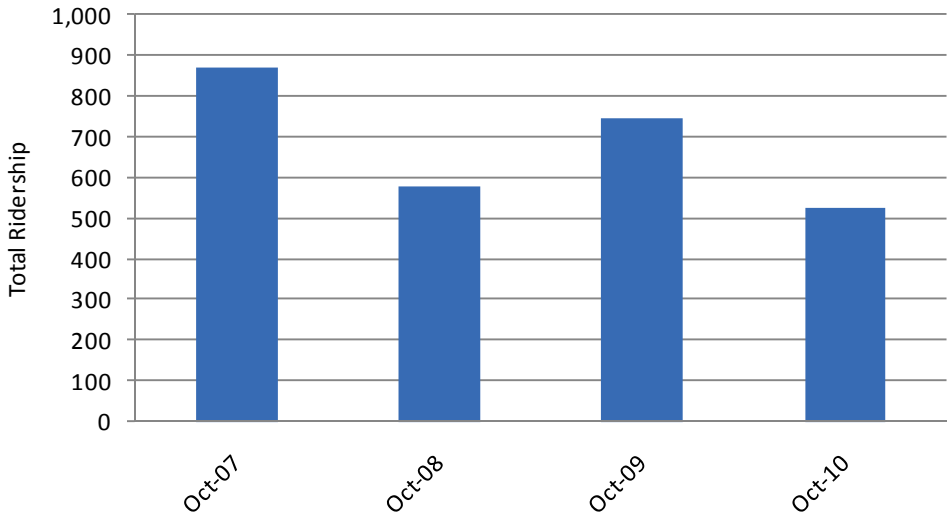
Key Route Issues and Observations

- *Alignment* – Route 24 is primarily linear and bi-directional along High Street and the outer end of the route. This alignment is far more direct than its daytime counterpart, Route 10.
- *Stops* – Bus stops along Route 24 are consistently spaced as demand and traffic flow dictate.
- *Schedule/Span of Service* – Route 24 operates Monday through Saturday from 7:15 p.m. until 11:35 p.m. (the last scheduled trip departs DTS at 11:15 p.m.) at 60-minute frequency. Daytime service is provided by Route 10. Sunday service is not offered.
- *Cycle/Layover Times* – Route 24 has a 30-minute cycle time and requires a portion of one bus to operate at 60-minute frequency. As such, it is interlined with Route 23 at the DTS. There are 27 minutes of scheduled running time and three minutes of scheduled recovery time at the DTS prior to the next departure prior to the next departure as Route 23.
- *Route Transfers* – Route 24 connects with all CAT evening routes (except Route 5) at the DTS.

Historical Ridership Characteristics

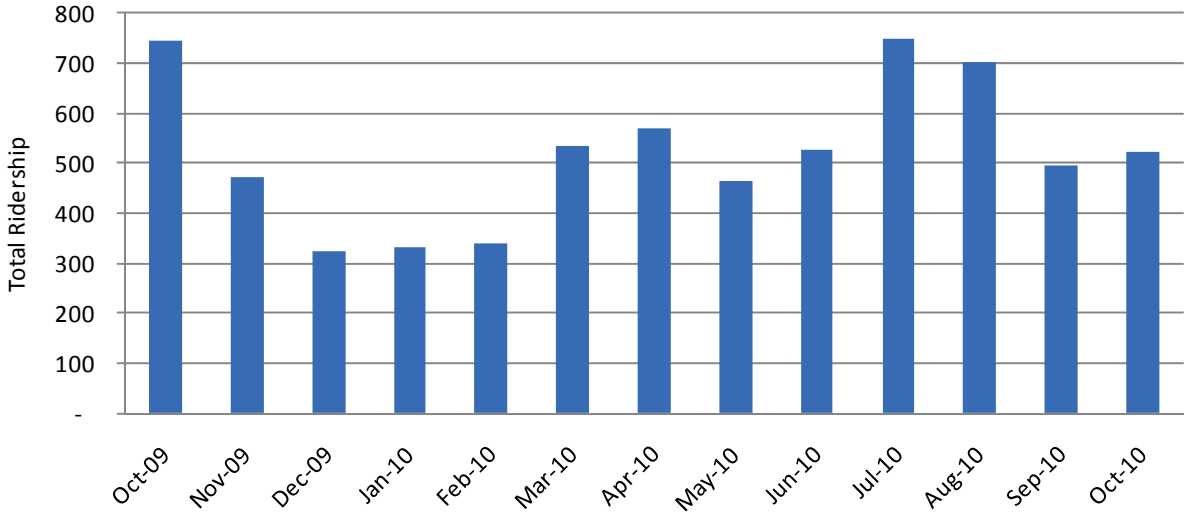
A year-by-year comparison of October ridership from 2007 through 2010 is presented in the figure below. With the exception of 2009, ridership on Route 24 has shown declines in ridership.

Year by Year October Ridership (2007 – 2010)



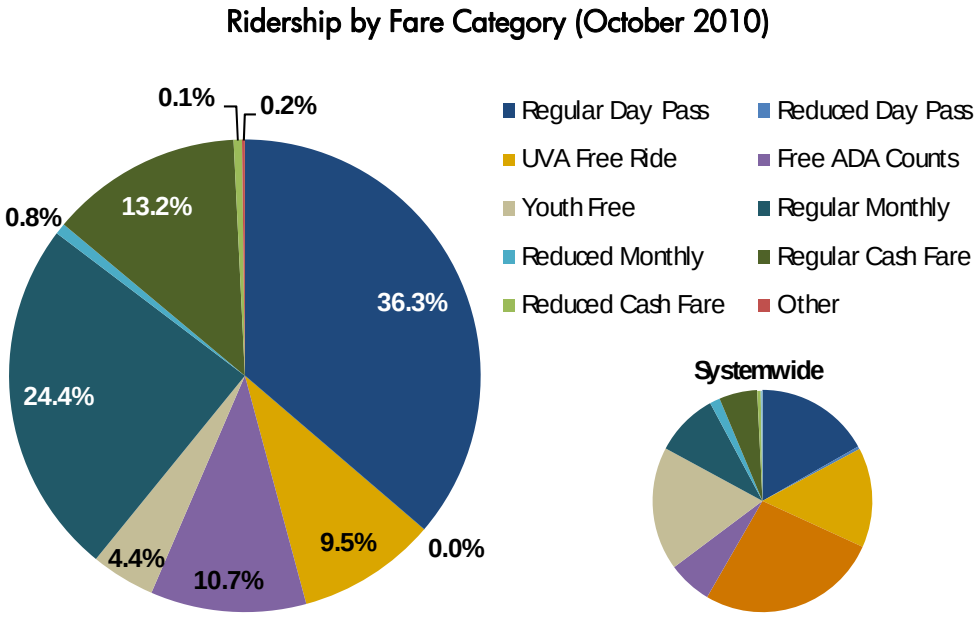
A month-by-month comparison of ridership from October 2009 through October 2010 is presented in the figure below. Ridership appears to be lowest during the winter months and highest in the summer months when weather is more favorable.

Month by Month Ridership (October 2009 – October 2010)



Farebox data from October 2010 was reviewed to determine fare category and transfer characteristics by route. CAT has two cash fare categories – standard and reduced (senior & disabled). There are also two pass categories (day pass and monthly pass), both with full-fare and reduced-fare subcategories. College ID from the University of Virginia is also accepted as fare and recorded separately. Children age five and under ride free as well when accompanied by an adult.

Ridership by fare category is presented in the figure below. Regular-Fare Day Passes generated the highest number of riders (36.3%). Regular-Fare Monthly Passes represented the next largest group (24.4%). Regular Cash Fare riders (13.2%), Free ADA Riders (10.7%) and UVA Riders (9.5%) were also well represented.



Current Ridership Characteristics

A weekday ridecheck survey was conducted in October 2010 for all CAT routes. Passenger boardings and alightings were recorded at every stop, and departure and arrival times were recorded at timepoints. Results from this survey are presented over the following pages:

- A table outlining number of boardings, maximum loads and on-time performance by time period and service day;
- Graphs showing ridership activity (boardings and alightings) by time of day and service day;
- Maps that illustrate total weekday ridership activity by stop for each direction; and
- Graphs that depict weekday boarding and alighting activity by stop, by direction, along with average daily line loads.

Pertinent ridership characteristics observed from the ridecheck survey data for Route 24 are as follows:

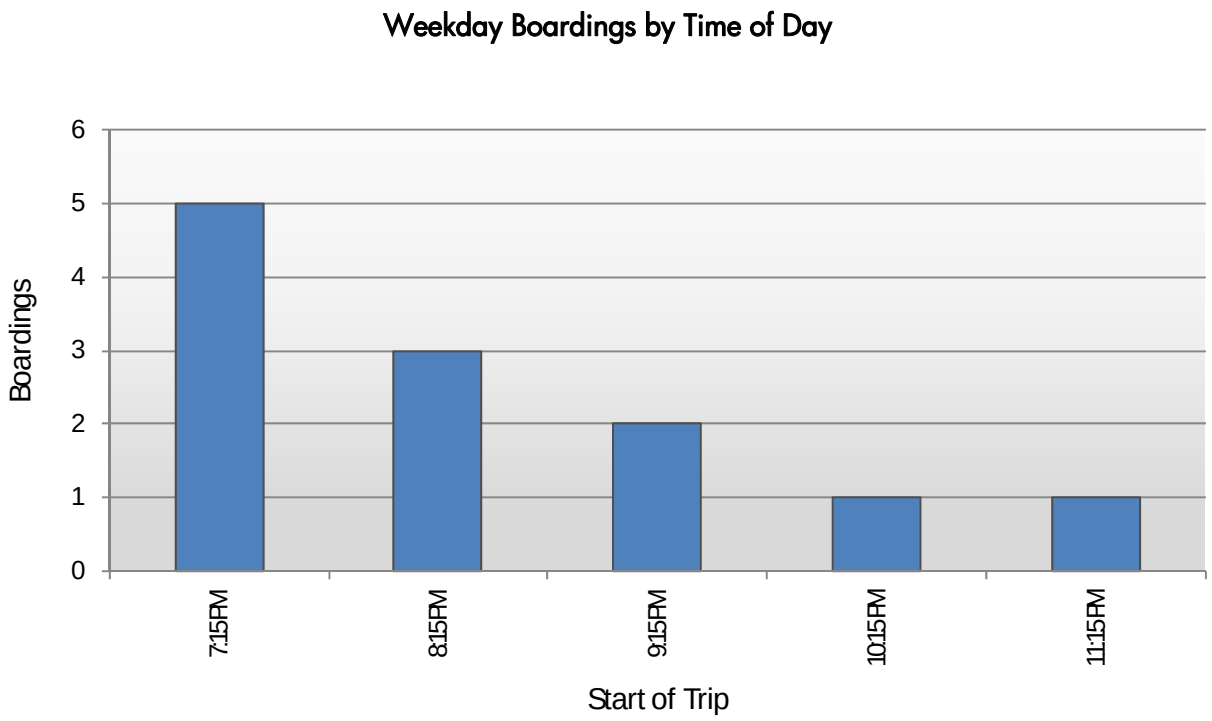
Route 24 Ridecheck Results Summary

Weekday					Saturday	Sunday
AM	MID	PM	EVE	Daily		
Boardings						
n/a	n/a	n/a	12	12	18	n/a
Maximum Load						
n/a	n/a	n/a	4	4	4	n/a
Timepoints Reached On Time						
n/a	n/a	n/a	96%	96%	85%	n/a

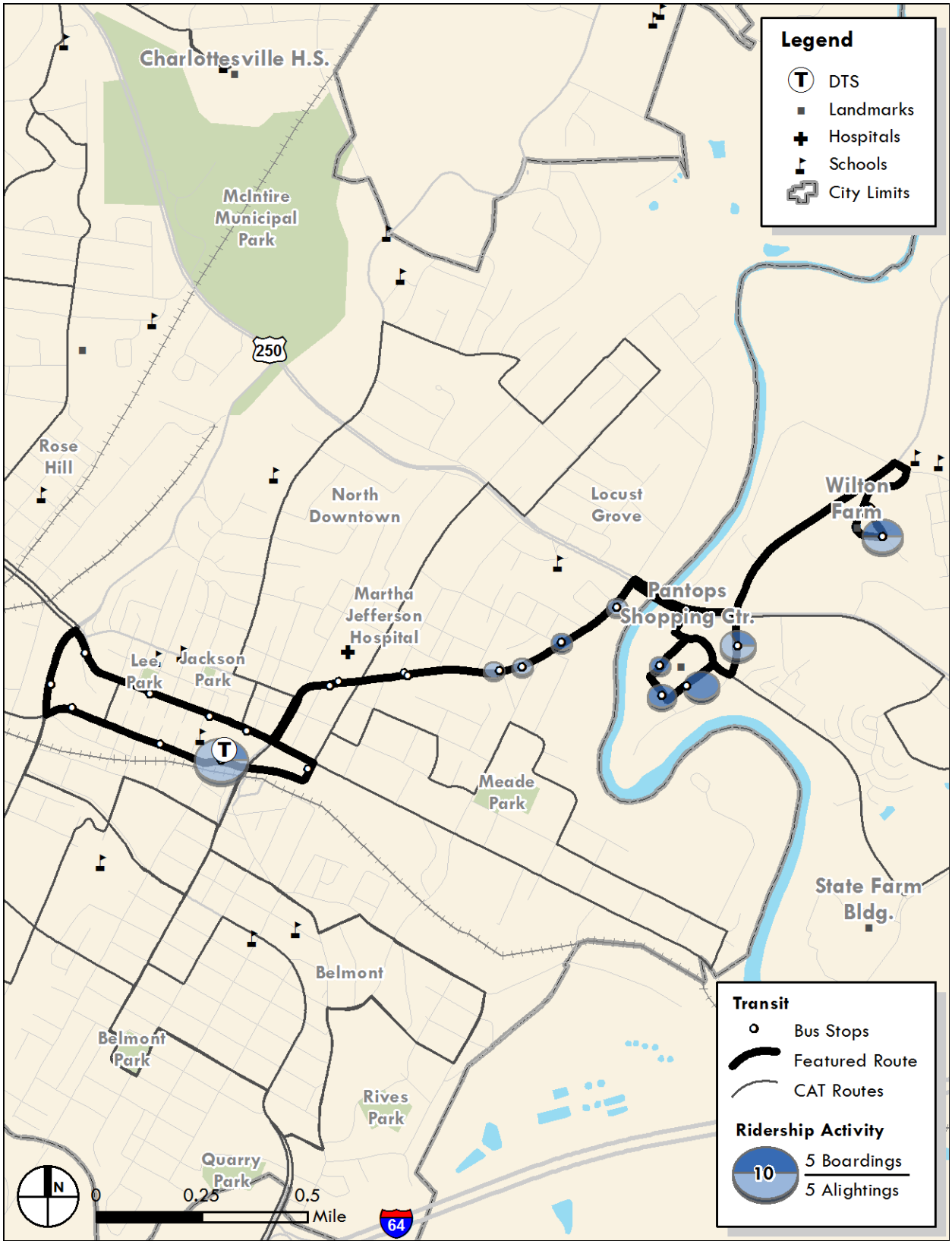
On time defined as between 1 minute early and 5 minutes late

Weekday Observations

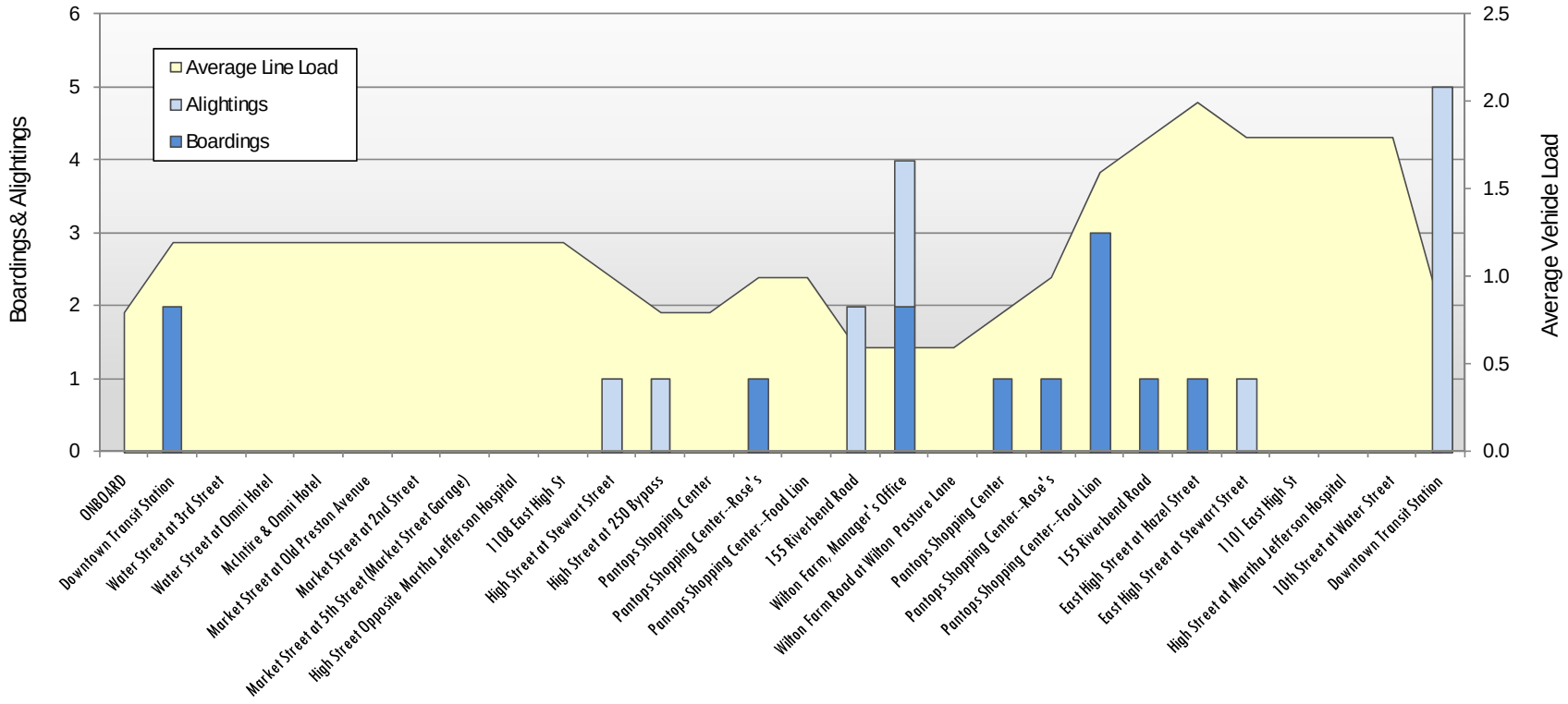
- Ridership on Route 24 is highest during the early evening hours.
- The maximum observed load was four passengers.
- The 7:15 p.m. trip carried the most passengers followed by the 8:15 and 9:15 p.m. trips. The 10:15 and 11:15 p.m. trips carried one rider each.
- The DTS is the highest volume stop on Route 24. The Wilton Farms Apartments were the next highest followed by Pantops Shopping Center. Of those boarding at Pantops Shopping Center, most were heading inbound toward DTS.
- On-time performance was met 96% of the time.


Weekday Boardings by Time of Day
Boardings
6
5
4
3
2
1
0
7:15PM
8:15PM
9:15PM
10:15PM
11:15PM
Start of Trip

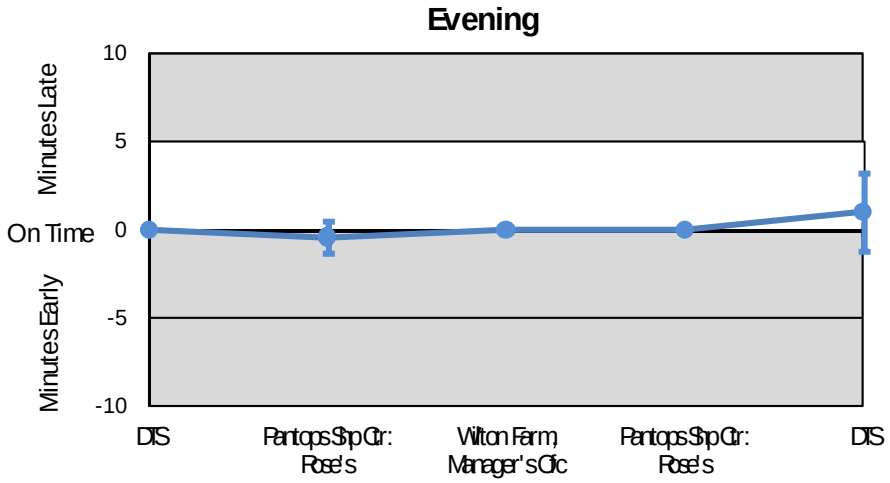
Weekday Ridership Activity



Weekday Ridership by Stop and Average Line Loads

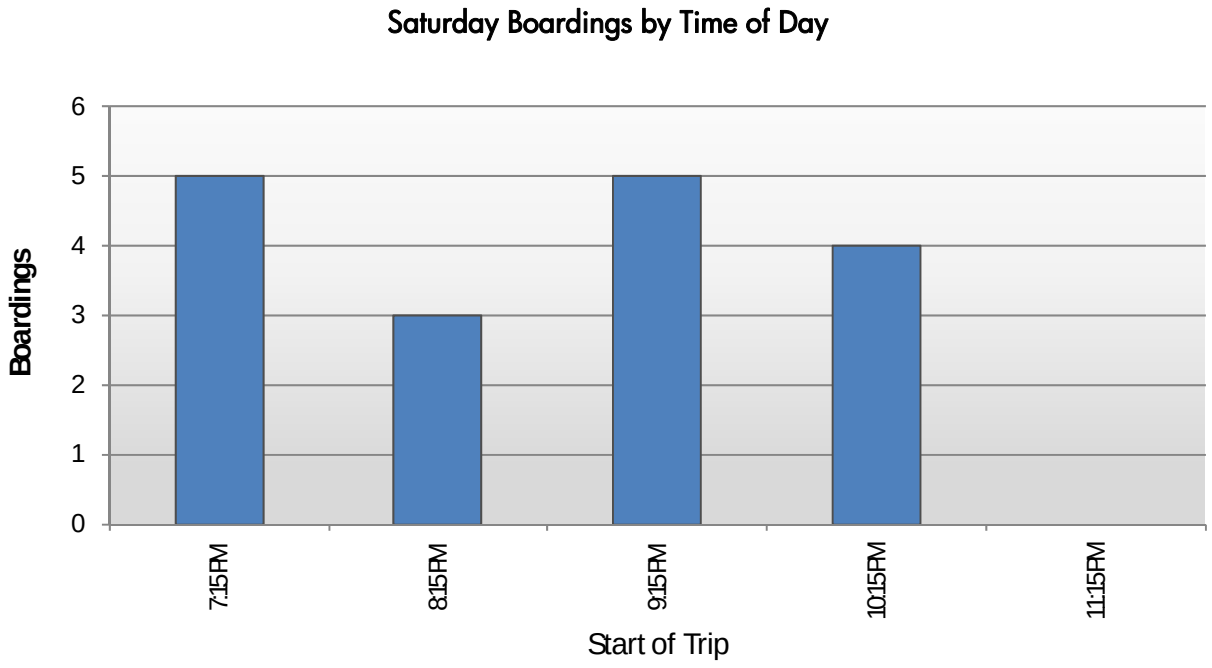


Weekday On-Time Performance by Period



Saturday Observations

- The busiest trips of the evening were at 7:15 and 9:15 p.m. followed by the 10:15 p.m. trip. Due to a scheduling error, the 11:15 p.m. trip was not recorded.
- Saturday trips carry 150% of the ridership levels drawn on weekdays. This is one of only two routes in the CAT system that carried more riders on Saturdays than on weekdays.
- The maximum load for Saturday trips was four.
- Saturday trips were on-time 85% of the time. Of the trips that were not on-time, all were instances of early departures.



Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #6: Peer Agency Review

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

January 2011

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This report conducts an analysis of peer transit agencies both within Virginia and outside of the commonwealth.

2 Overview of Peer Analysis Process

A peer analysis provides the means to compare various performance measures of a transit agency to other transit systems of similar size and operating characteristics. Transit agencies report such information to the Federal Transit Administration (FTA), which records the information annually in the National Transit Database (NTD). There are strict requirements with regards to the manner in which cost and service characteristics are reported. Thus, the NTD provides a consistent set of measurable data that can be used in a peer systems analysis.

While a peer analysis based on NTD data provides operational service and financial information, it is important to keep in mind other aspects of service quality that are not reported in the NTD, such as passenger satisfaction, vehicle cleanliness and comfort, schedule adherence and route connectivity. It is also important to keep in mind unique operating and financial characteristics that may be associated with a particular transit agency.

The FTA's National Transit Database is the only comprehensive source of validated operating and financial data reported by transit systems nationwide. This database is updated annually with information submitted by each transit system. The FTA reviews and confirms the accuracy of the information received and publishes a final report after a reporting transit system successfully responds to all comments and inquiries. The NTD is used by the FTA and other federal, state, and local agencies as a resource to help guide public investment decisions, shape public policy, and develop planning initiatives and also reports various standard measures of performance that identify the efficiency and effectiveness of transit services on a local, regional and national basis.

3 Peer Selection Process

Select criteria were used to identify transit systems that have similar service area characteristics. Those criteria include:

- Service Area (square miles)
- Population
- Population Density
- Major University Presence
- Fare Compatibility for University Students
- Climate

Four peer cities and their respective transit agencies were identified for comparison – two within Virginia and two outside of the commonwealth. These cities/agencies are:

- Lynchburg, VA (Greater Lynchburg Transit Company)
- Harrisonburg, VA (Harrisonburg Transit)
- Athens, GA (Athens Transit and UGA Campus Transit)
- Columbia, MO (Columbia Transit)

Table 3-1 summarizes service area size, population and population density for the peer transit systems selected for analysis. Of the four peer agencies, Greater Lynchburg Transit Company (GLTC) had the largest service area. However, this number is somewhat deceiving as GLTC provides limited fixed-route and demand-response service outside of the city in neighboring Amherst County, which is far more rural. As such, their geographic service area may be exaggerated when in reality their fixed-route footprint is similar in geographic size to Charlottesville. Harrisonburg's service area and population are both smaller than Charlottesville with population density that is somewhat higher. Regardless, this was one of only a few candidate cities within Virginia that could be considered based on the "major university presence" criteria. The two national peers are more closely aligned to Charlottesville when comparing population density. It is also important to note that like CAT, Athens Transit is the primary service provider within the city while the university provides campus-oriented service. Thus, only Athens Transit's service area is represented in Table 3-1 since UGA Campus Transit's service area falls wholly within these boundaries.

Table 3-1

Peer Selection – Size, Population and Density

	NTD ID	Agency	City	Svc Area	Population	Pop Density
State Peers	3008	Greater Lynchburg Transit Company	Lynchburg, VA	72	80,846	1,123
	3094	Harrisonburg Transit	Harrisonburg, VA	17	45,889	2,699
National Peers	7016	Columbia Transit	Columbia, MO	30	57,000	1,900
	4047	Athens Transit System	Athens, GA	44	101,000	2,295
	3036	**Charlottesville Area Transit**	**Charlottesville, VA**	**38**	**81,449**	**2,143**
Composite Peers	Min			17	45,889	1,123
	Max			72	101,000	2,699
	Avg			**41**	**71,184**	**2,004**

To ensure a fair comparison between the Charlottesville, university enrollment along with any reciprocity agreements were also reviewed in Table 3-2. Of the four peer communities, James Madison University in Harrisonburg had the smallest enrollment while the University of Georgia in Athens boasted the highest. Notably, the two Virginia universities (Liberty and James Madison) were most closely aligned with the University of Virginia's enrollment. All but one of the peers (University of Missouri) provide a fare arrangement that allows students to ride transit for free. In Columbia, University of Missouri students ride for half-price. Operationally, the transit relationship between the city and the university is most closely represented in Athens. Like Charlottesville, the University of Georgia operates its own campus-oriented system while the City of Athens provides transit to its residents through its own service.

Table 3-2

Peer Selection – University Presence, Enrollment and Transit Relationship

	City	University Presence	Enrollment	University Transit Relationship
State Peers	Lynchburg, VA	Liberty University	19,214	contracted with GLTC, students ride free on all services
	Harrisonburg, VA	James Madison University	18,454	none, students ride free on Harrisonburg Transit
National Peers	Columbia, MO	University of Missouri	32,009	provided by Columbia Transit, 1/2 price fare for students
	Athens, GA	University of Georgia	34,885	provided fare-free by Campus Transit, Athens Transit fare-free for students
	Charlottesville, VA	**University of Virginia**	**19,784**	**provided fare-free by UTS, CAT fare-free for students**
Composite Peers	Min		18,454	
	Max		34,885	
			26,141	

4 Peer System Overview

A general overview of peer system operating and capital budgets, ridership and service area was completed prior to conducting a detailed assessment of specific financial, ridership and service characteristics.

4.1 Annual Operating and Capital Budgets

Table 4-1 summarizes the annual operating and capital budgets for the peer systems. A breakdown of the level of funding by source is also provided. Key characteristics to note are as follows:

Operating Budget

- CAT's operating budget of approximately $6.2 million was one-third higher than the peer average of $4.6 million. Of the four peer systems, GLTC in Lynchburg was the most similar to CAT with respect to size of the annual operating budget.
- CAT derived a significant lower share of its operating revenue from fares (12 percent of the total budget) than the peer average (24 percent).
- Local funds comprise CAT's largest operating funding source (41 percent). This was about 10 percent higher than the peer average of 31 percent.
- CAT's share of federal operating assistance is comparable to that of its peers (27 percent vs. 28 percent).

Capital Budget

- CAT's 2009 capital budget was the second highest ($5.4 million) compared to the 2009 peer average. Only GLTC in Lynchburg budgeted more at $6.1 million. It should also be noted that the 2009 capital budgets of the individual peers ranged from a low of $41,816 to a high of $6.1 million. In addition, capital budgets by agency vary significantly by year depending on the type and level of expenditure programmed for each particular year.
- Compared to its peers, CAT had a slightly higher level of federal participation in funding capital projects (75 percent) than the peer average (72 percent).
- CAT was more reliant on local funds for capital (12 percent versus the peer average of 6 percent).

A more detailed analysis of the operating and capital budgets is provided in Section 6 of this report.

Table 4-1
Comparison of 2009 Operating and Capital Budgets

	Athens (GA) Transit	Columbia (MO) Transit	Harrisonburg (VA) Transit	GLTC (Lynchburg, VA)	*Peer Average*	CAT (Charlottesville, VA)
Fares	39%	9%	42%	15%	24%	12%
Local Assistance	36%	32%	13%	36%	31%	41%
State Assistance	0%	2%	19%	21%	11%	19%
Federal Assistance	24%	36%	25%	27%	28%	27%
Other Funds	0%	21%	1%	1%	6%	1%
Total Operating Budget	**$4,129,593**	**$4,805,399**	**$3,224,749**	**$6,359,834**	**$4,629,894**	**$6,175,949**
Local Assistance	9%	100%	4%	7%	6%	12%
State Assistance	11%	0%	17%	27%	22%	14%
Federal Assistance	80%	0%	78%	66%	72%	75%
Other Funds	0%	0%	0%	0%	0%	0%
Total Capital Budget	**$737,123**	**$41,816**	**$4,891,273**	**$6,052,368**	**$5,433,077**	**$5,433,077**

4.2 Annual Ridership

Annual ridership, as measured in passenger trips, reflects the total number of boardings made by users of the transit system. A passenger trip is recorded every time a person boards a transit vehicle, including multiple transfers that may occur between the trip origin and the final destination. Since university ridership is inclusive of the peer services in Columbia, Harrisonburg and Lynchburg, this analysis will view Athens and Charlottesville ridership as combined with their respective university transit provider as shown in Table 4-2:

- CAT's and UTS' combined system ridership (4,929,934) was approximately 8.6 percent higher than the peer average (4,540,696);
- Among the peers, ridership levels were extremely diverse with Athens recording the highest (11,257,766) and Harrisonburg the lowest (1,686,751);
- Annual ridership in Columbia (2,263,406) and Lynchburg (2,294,860) were also relatively lower than Charlottesville.

Table 4-2
Comparison of 2009 Annual Ridership

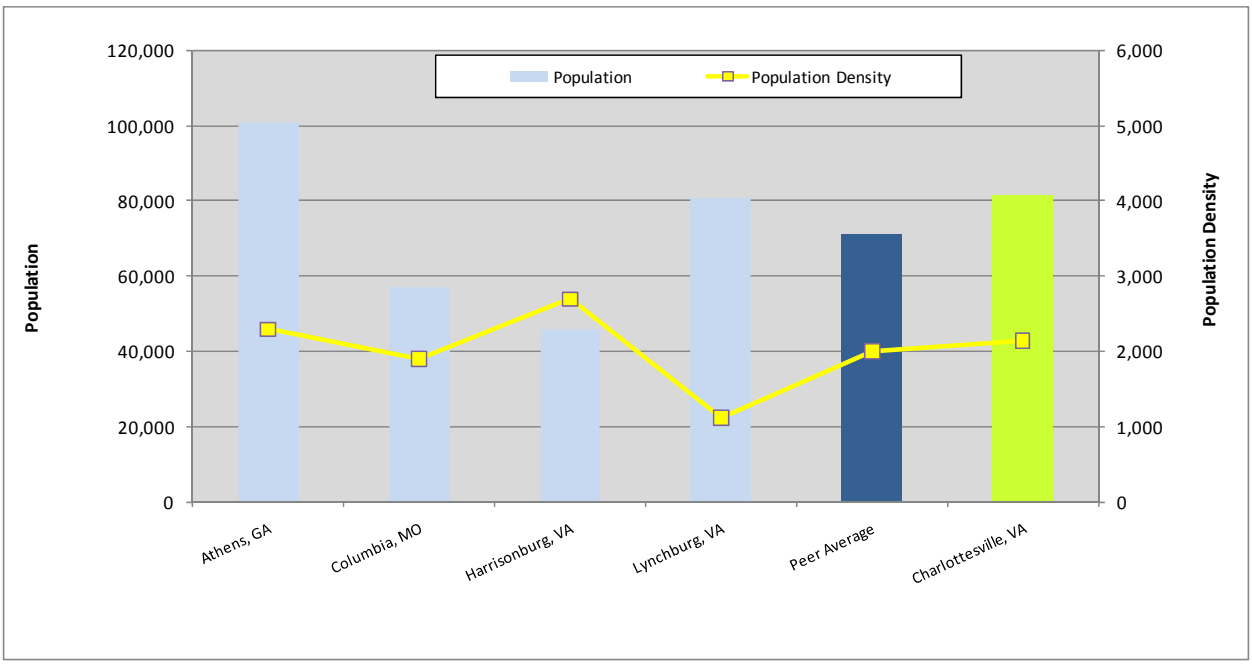
	Athens (GA) Transit & UGA	Columbia (MO) Transit	Harrisonburg (VA) Transit	GLTC (Lynchburg, VA)	*Peer Average*	CAT & UTS (Charlottesville, VA)
Annual Ridership (fixed route trips)	11,257,766	2,263,406	1,686,751	2,954,860	4,540,696	4,929,934

4.3 Service Area Characteristics

Figure 4-1 summarizes and compares the service area characteristics (service area population, service area miles and population density) for CAT and the peer systems. As noted earlier in this Technical Memorandum, Athens Transit's service area is inclusive of UGA Campus Transit's service area and population. As shown on the graph, the CAT's population density is very similar to that of its peers.

- CAT's service area (38 square miles) is nearly 9 percent larger than the peer average square miles (35 square miles).
- CAT's service area population (81,449) is about 24 percent larger than the peer average (65,747).
- CAT's service area's population density (2,143 persons per square mile) is about four percent lower than the peer average (2,232 persons per square mile).

Figure 4-1
Peer Systems Service Area Characteristics



4.4 Services Provided

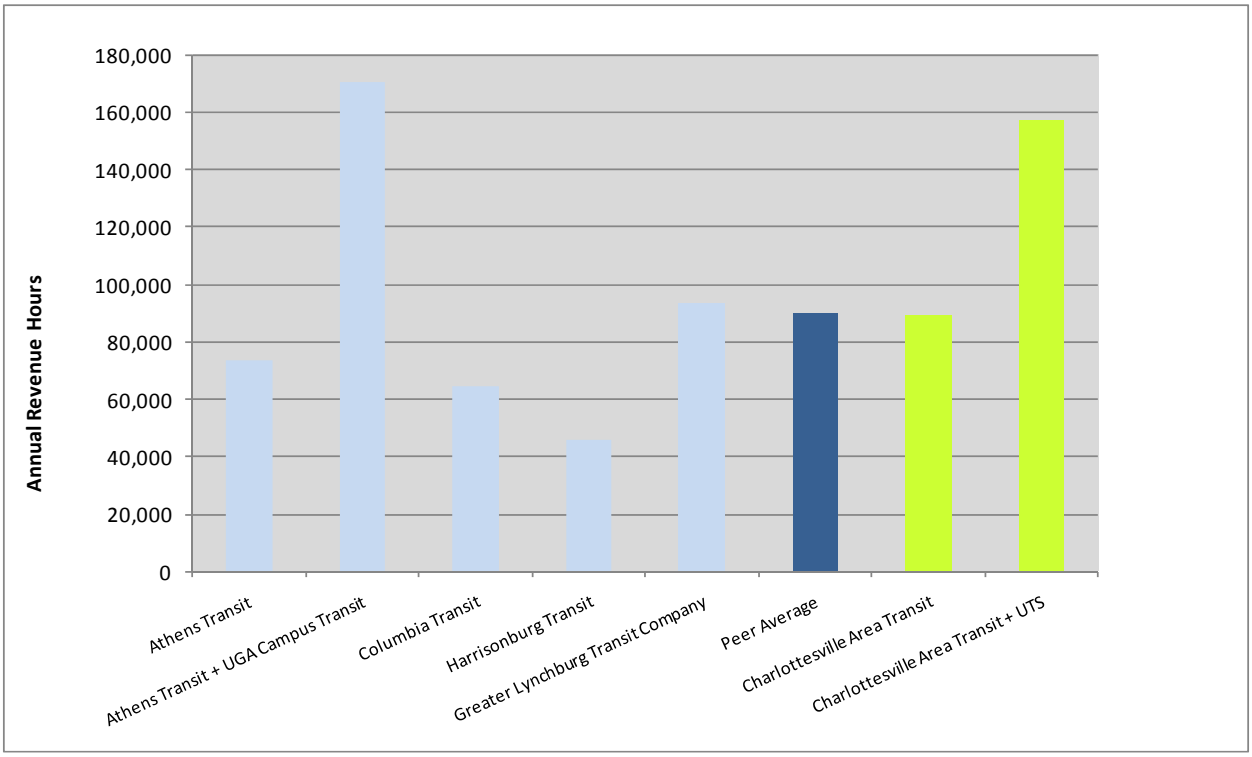
Unlike CAT, all peer systems operate both fixed-route and demand-responsive services. In Charlottesville, demand-response paratransit services are provided by JAUNT, a non-profit corporation that provides rural and specialized transportation services throughout central Virginia including the City of Charlottesville and Albemarle County. Fixed route service hours for each peer agency are as follows:

- Athens Transit (GA): 6:00 a.m. to 11:00 p.m., Monday through Friday
  7:00 a.m. to 11:00 p.m., Saturday
  No Service on Sunday
- UGA Campus Transit: 6:00 a.m. to 6:00 p.m., Monday through Friday
  10:00 a.m. to 10:00 p.m., Saturday
  10:00 a.m. to 10:00 p.m., Sunday
- Columbia Transit (MO): 6:25 a.m. to 1:30 a.m., Monday through Friday
  9:50 a.m. to 1:30 a.m., Saturday
  12:00 p.m. to 1:30 a.m., Sunday
- Harrisburg Transit: 6:38 a.m. to 12:00 a.m. Monday through Thursday
  6:38 a.m. to 3:00 a.m., Friday
  8:38 a.m. to 3:00 a.m., Saturday
  11:00 a.m. to 12:00 a.m., Sunday
- GLTC (Lynchburg): 5:20 a.m. to 2:00 a.m., Monday through Friday
  5:20 a.m. to 2:00 a.m., Saturday
  8:00 a.m. to 2:00 a.m., Sunday
- CAT (Charlottesville): 6:15 a.m. to 11:48 p.m., Monday through Friday
  6:15 a.m. to 11:48 p.m., Saturday
  7:45 a.m. to 5:57 p.m., Sunday
- UTS (Univ. of Virginia): 6:00 a.m. to 12:30 a.m., Monday through Friday
  12:00 p.m. to 12:30 a.m., Saturday
  12:00 p.m. to 12:30 a.m., Sunday

All agencies except for Athens Transit operate Monday through Sunday. On Sundays, only UGA Campus Transit operates in Athens. CAT's weekday start times are very similar to its peers with GLTC being the earliest at 5:20 a.m. GLTC also operates the latest on weekdays at 2:00 a.m. However, GLTC's latest service is limited to its on-campus circulator at Liberty University. Within the city, GLTC's latest routes operate until 10:15 p.m. On Friday and Saturday evenings, Harrisonburg Transit operates its JMU-oriented services even later until 3:00 a.m. On Saturdays, CAT provides earlier service than some of its peers. On Sundays, CAT tends to end service earlier than most.

Despite the similarity between the peer communities' size and densities, the amount of service provided is far more diverse. Figure 4-2 identifies the number of annual service hours provided in each city. For cities with more than one provider (Athens and Charlottesville), hours are shown both individually and inclusive of the university service provider. Notably, the two communities whose city service is separate from the university service provide far more service hours than the communities whose services are integrated.

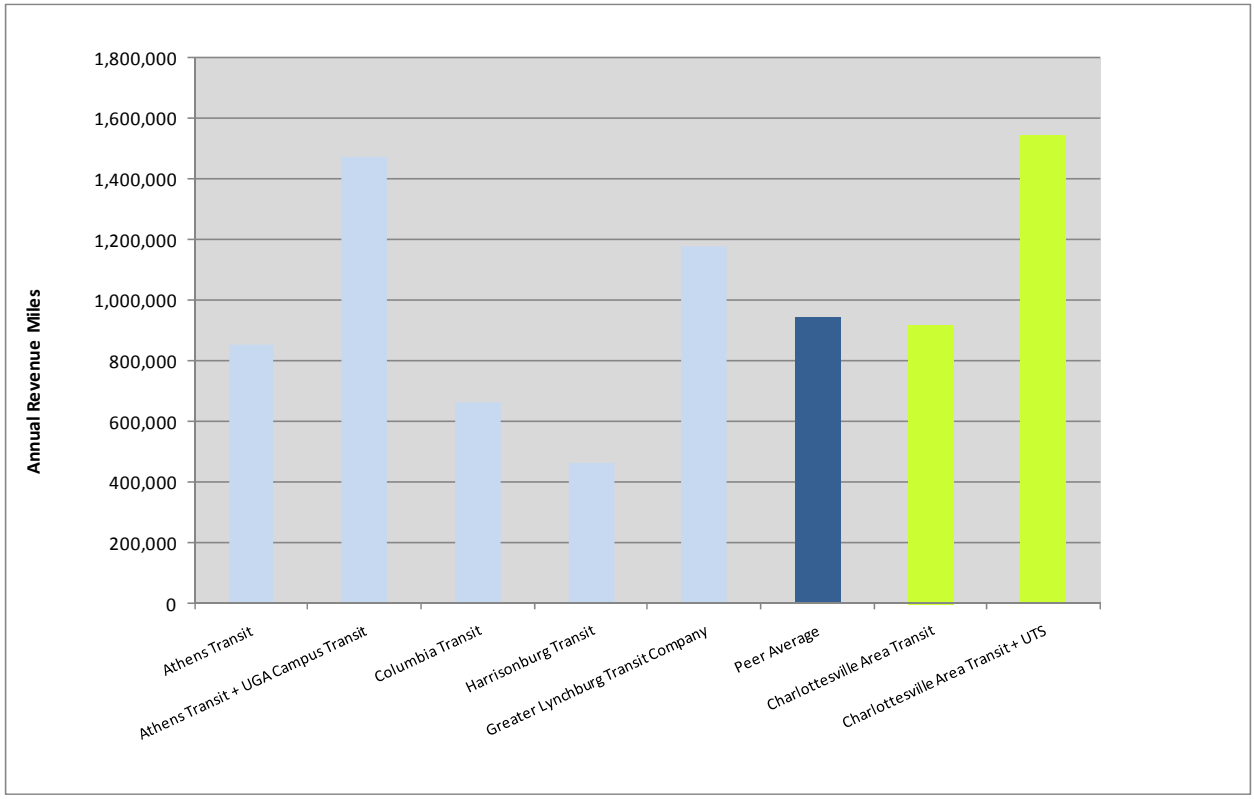
Figure 4-2
Annual Revenue Hours



Note: Peer Average does not include Athens Transit as a stand-alone agency

Likewise, the number of revenue miles provided among the peers reflects the same diversity as shown in service hours (see Figure 4-3). Again, the two communities that utilize separate providers for university and city transit service (Athens and Charlottesville) provide the highest number of service miles. Along that same vein, Athens Transit and CAT also provide similar amounts of service miles to its residents.

Figure 4-3
Annual Revenue Miles



Note: Peer Average does not include Athens Transit as a stand-alone agency

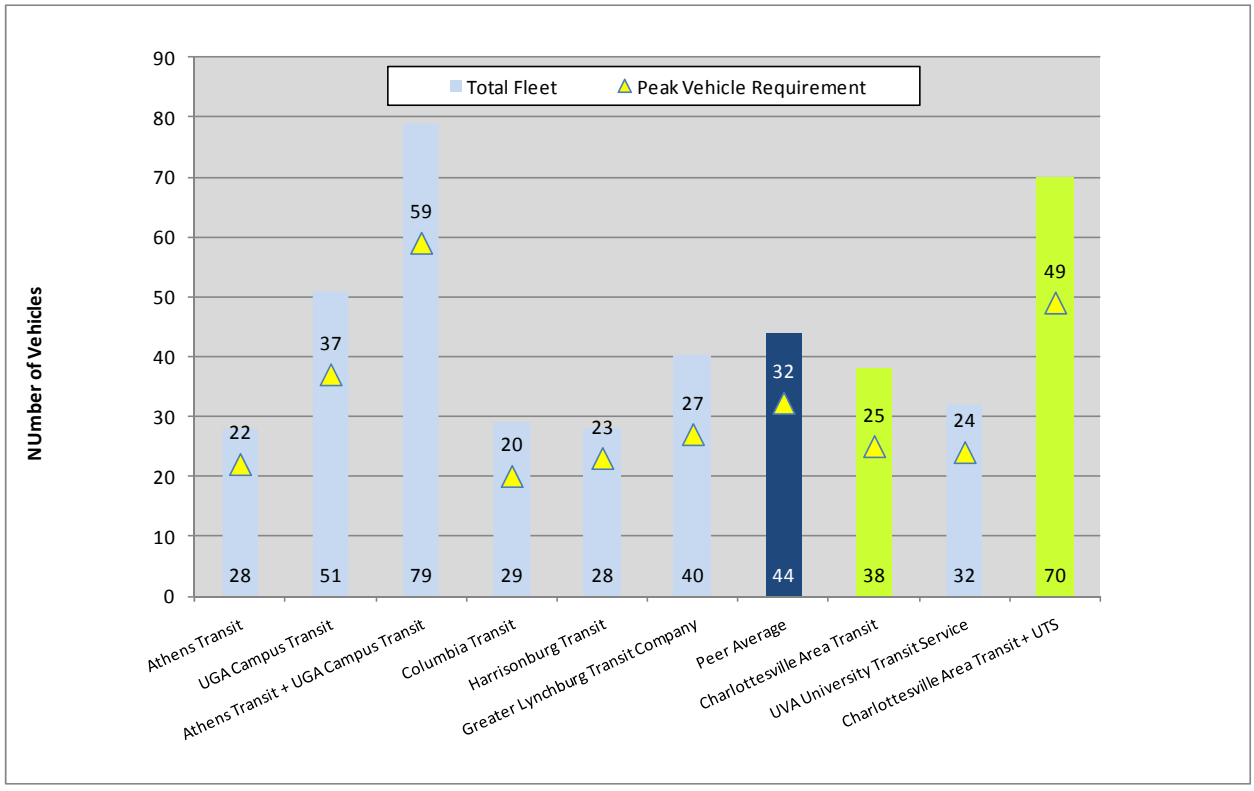
5 Service Productivity Comparisons

This section presents a detailed comparison of specific service productivity measures. These productivity measures focus on: vehicle utilization, service supply, service productivity, cost efficiency and vehicle maintenance performance, characteristics.

5.1 Vehicle Utilization

Peak Vehicles and Vehicles Available: As shown in Figure 5-1, the overall CAT fleet size reported in 2009 was 38 with a peak requirement of 25 vehicles (52% spare ratio). When combined with UTS, the entire Charlottesville fleet consisted of 70 vehicles with a daily peak requirement of 49 (43% spare ratio). By comparison, the peer average was 44 vehicles available operating 32 during the peak (38% spare ratio). Looking at each fleet individually, the largest was 51 buses (UGA Campus Transit) followed by GLTC (40 buses) and CAT (38 buses).

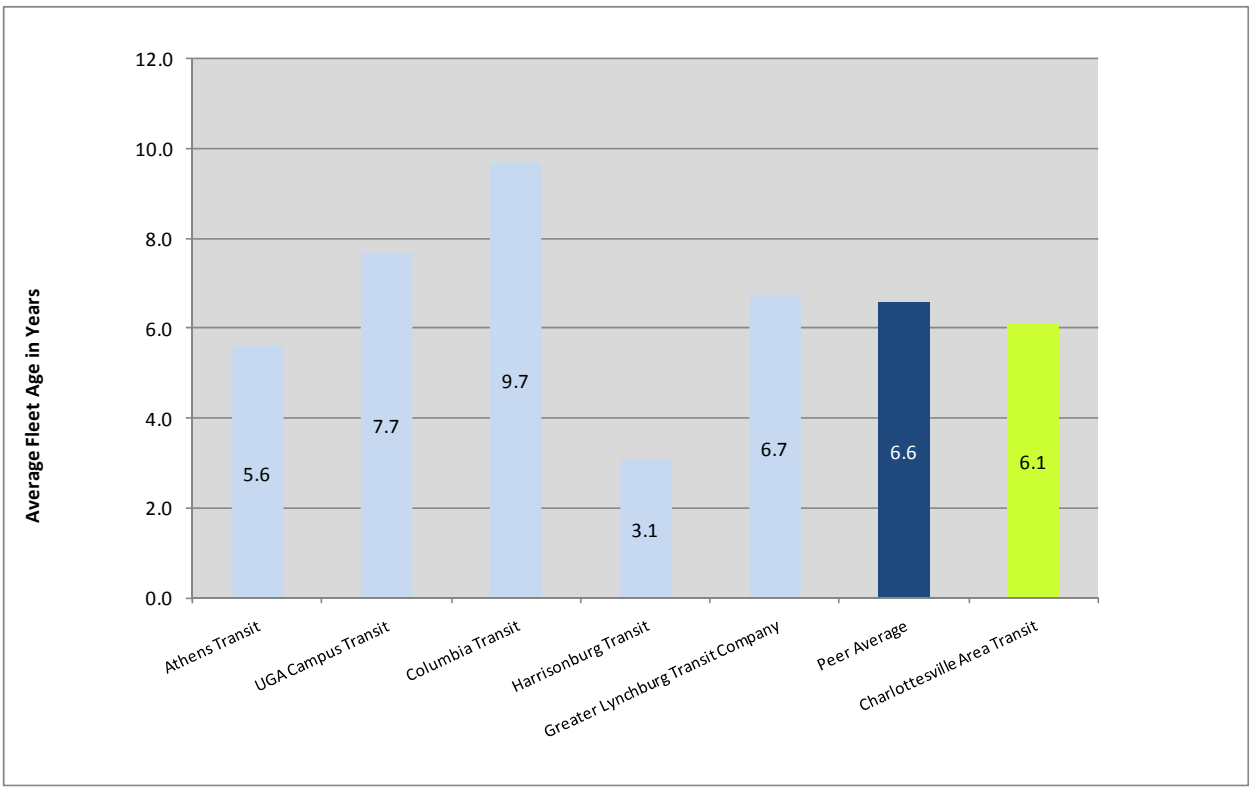
Figure 5-1
Peak Vehicle Requirement and Total Fleet



Note: Peer Average does not include Athens Transit and UGA Campus Transit as stand-alone agencies

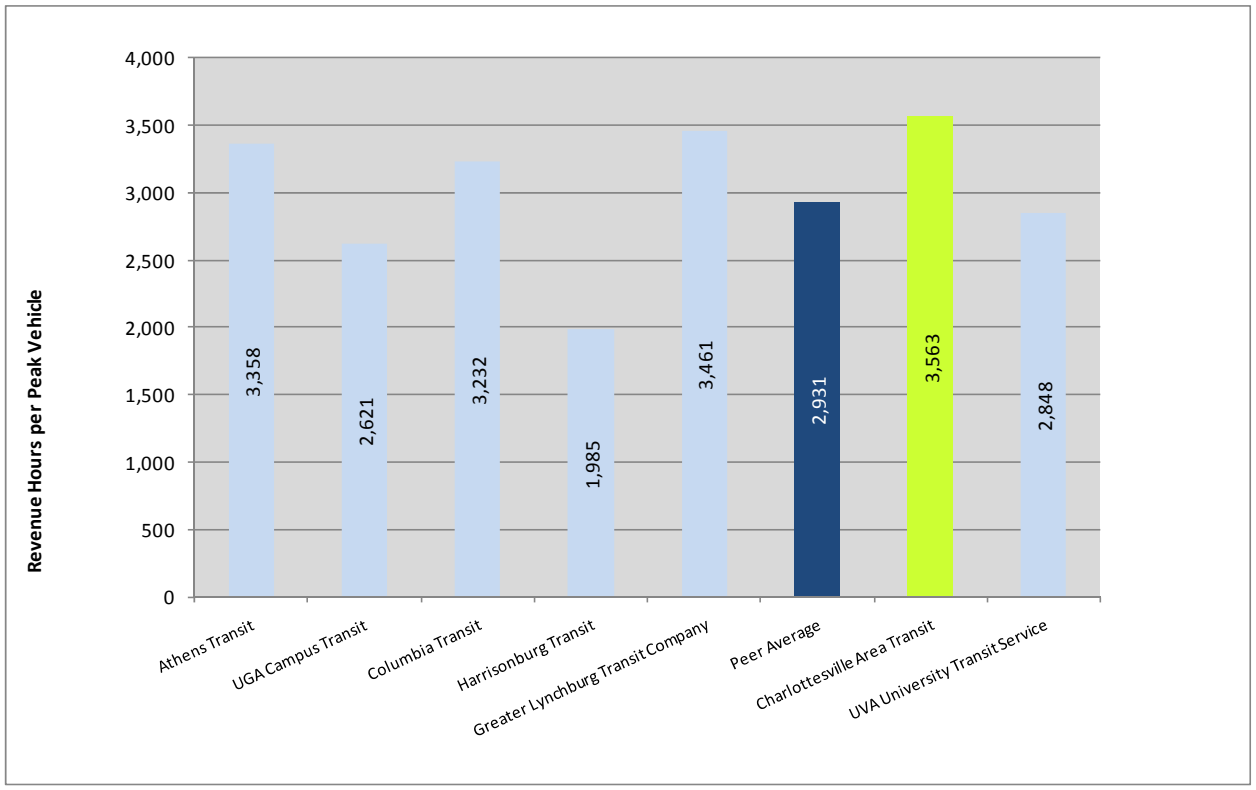
Fleet Age: In Figure 5-2, the average age of the CAT bus fleet was slightly lower than the peer average (6.1 years vs. 6.6 years). Columbia Transit registered the oldest fleet (9.7 years) while Harrisonburg Transit had the newest (3.1 years). Given the recommended life of a heavy-duty transit buses is rated at 12 years, CAT's average fleet age falls right at the mid-life expectancy point.

Figure 5-2
Average Fleet Age



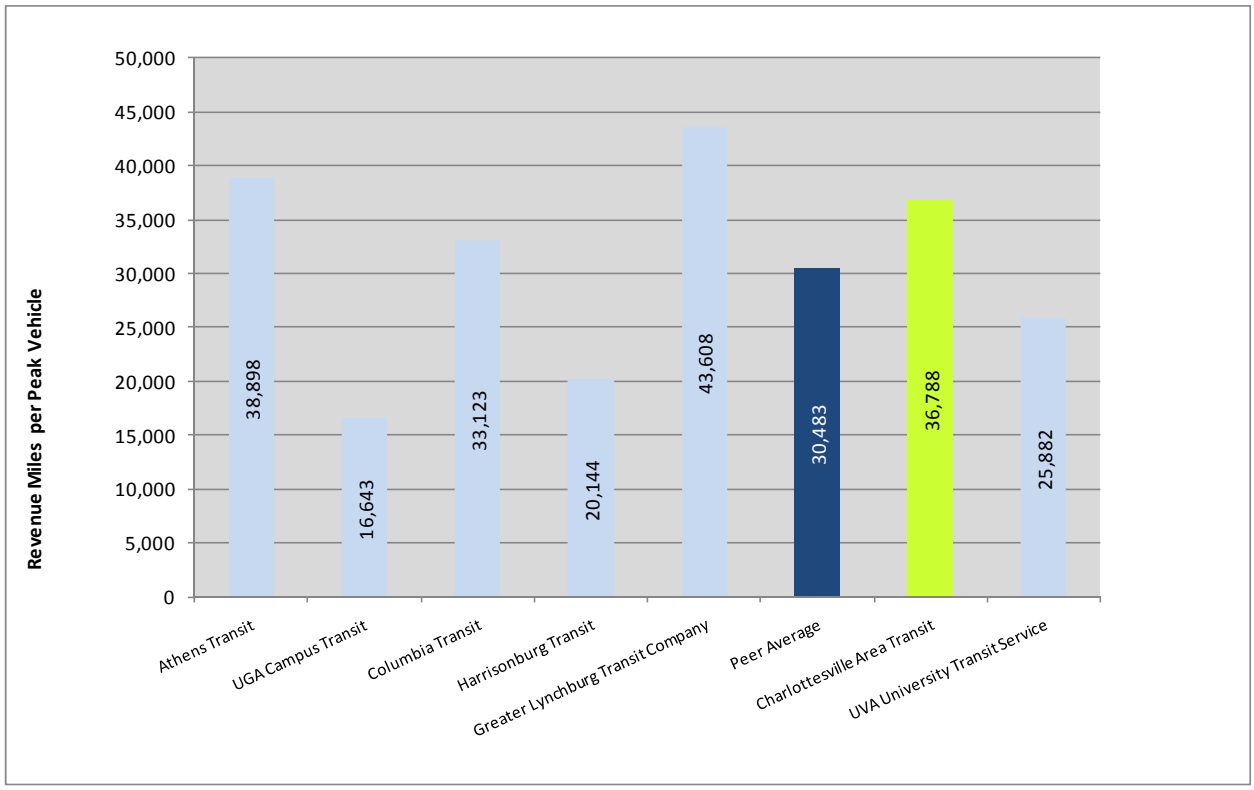
Revenue Hours per Peak Vehicle: Overall, CAT's peak vehicles were in service for more revenue hours than the peer average as well as any individual service provider (see Figure 5-3). CAT provided 3,563 hours per peak vehicle compared to the peer average of 2,931 hours. Harrisonburg Transit showed the lowest utilization rate with 1,985 hours per peak vehicle.

Figure 5-3
Revenue Hours per Peak Vehicle



Revenue Miles per Peak Vehicle: CAT's peak vehicles were in service for more revenue miles than the peer average (see Figure 5-4). CAT provided 36,788 miles per peak vehicle compared to the peer average of 30,483 hours. GLTC and Athens Transit showed higher utilization rates with 43,608 and 38,898 miles, respectively.

Figure 5-4
Revenue Miles per Peak Vehicle



5.2 Service Supplied

Transit Service per Capita: As shown in Figure 5-5, Charlottesville residents receive 46 percent more revenue hours of service per capita than the peer average. The closest peer was Athens, GA which also operates a university-based transit system separate from the city system. Similar findings held true for service miles per capita (see Figure 5-6). Charlottesville residents receive 43 percent more miles of service than the peer average.

Figure 5-5
Revenue Hours per Capita

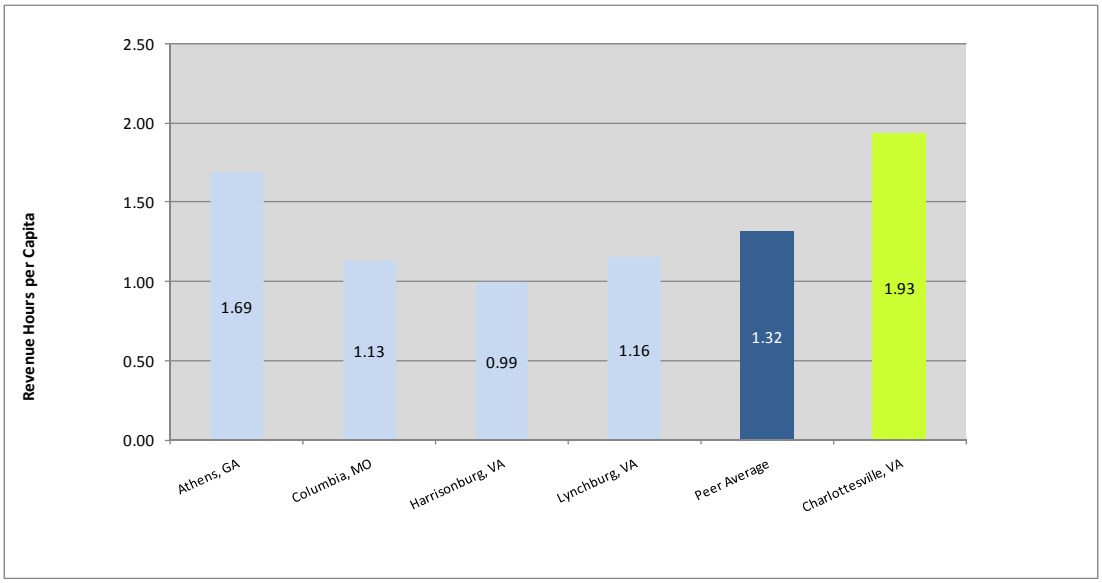
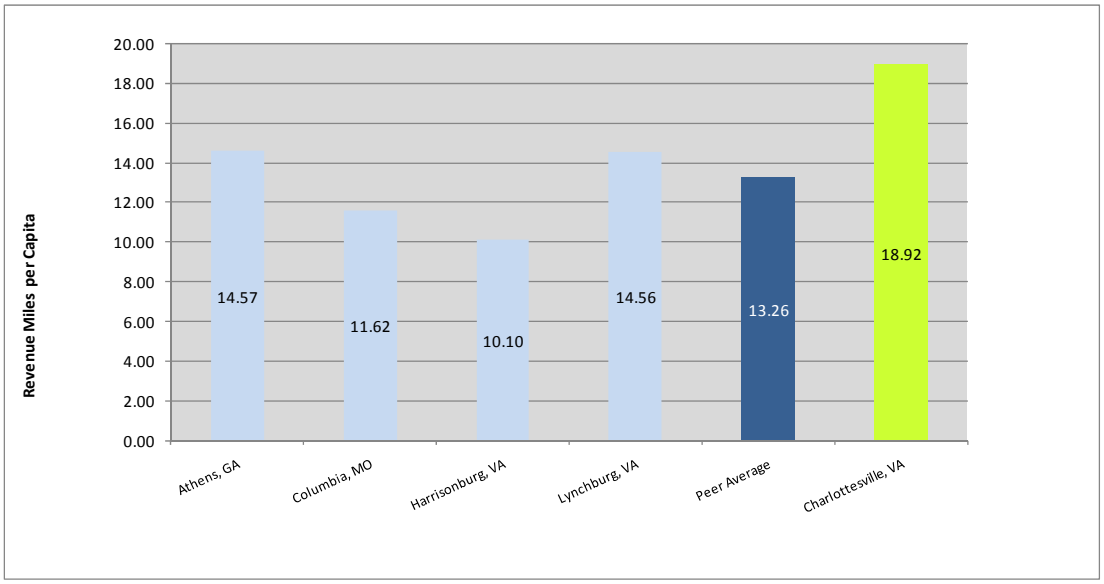


Figure 5-6
Revenue Miles per Capita



Service Area: As shown in Figure 5-7, areas served by CAT and UTS receive over two and one-half times the number of revenue hours than the peer average. This may be reflective of the higher concentration of frequencies on the UVA campus as well as on CAT's more popular routes such as Route 7 and the Trolley. The next closest peer was Athens, GA which also operates a university-based transit system separate from the city system. Similar findings held true for the number of service miles per square mile (see Figure 5-8). Areas served in Charlottesville receive more than two and one-half times the service miles than the peer average.

Figure 5-7
Revenue Hours per Square Mile

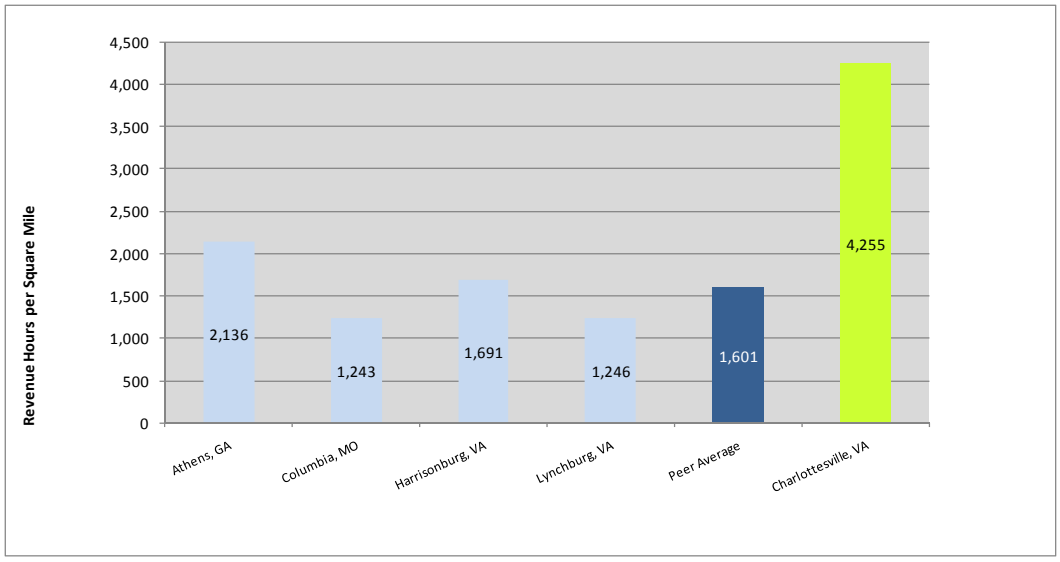
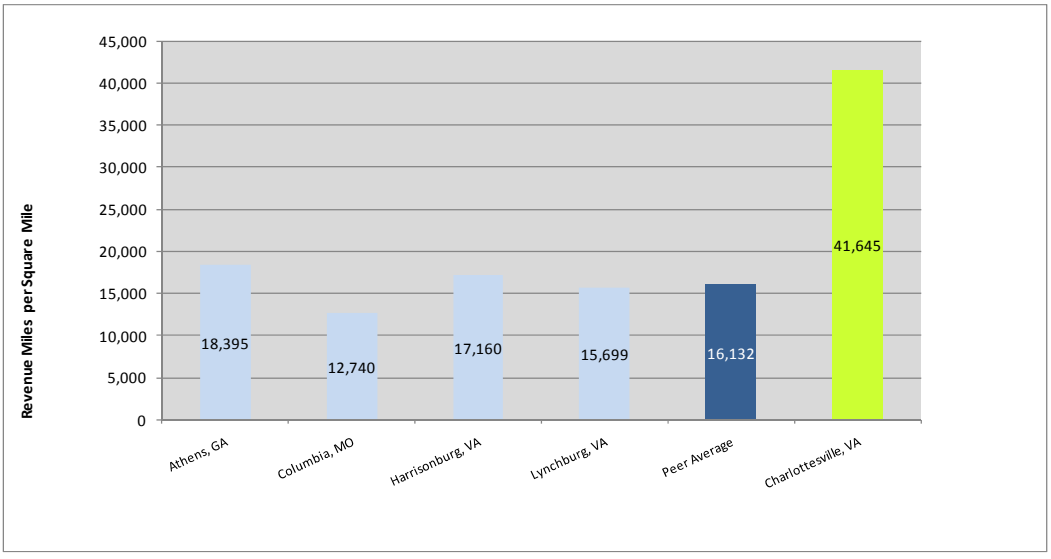


Figure 5-8
Revenue Miles per Square Mile

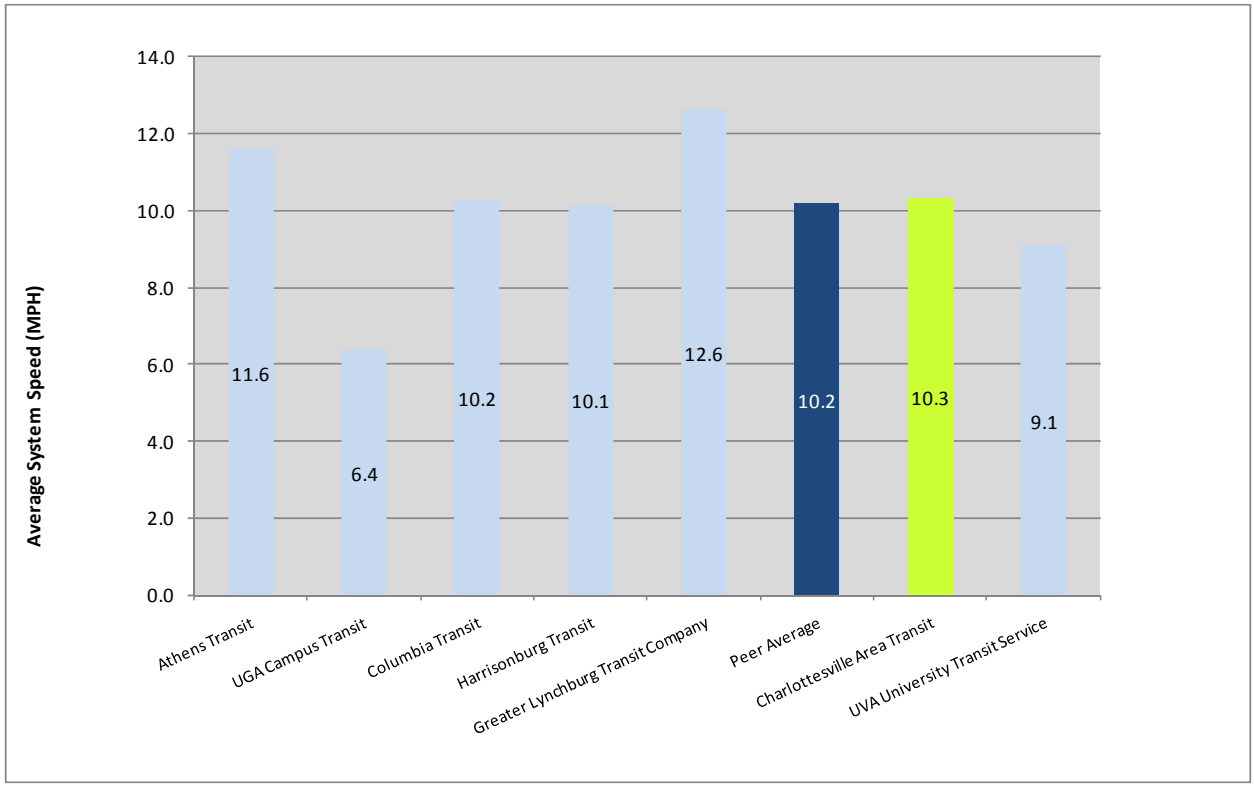


5.3 Service Productivity (Effectiveness)

Service productivity or effectiveness provides a method to evaluate if a transit agency's service is effectively transporting passengers, relative to the level of service provided. Three measures that reveal the service productivity of a transit system are passenger trips per capita, passenger trips per revenue hour, and passenger trips per revenue mile. However, consideration should also be given to the average speed of a system. Systems that are plagued by chronic traffic congestion are typically more challenged to be as productive as those that can maintain a consistent pace.

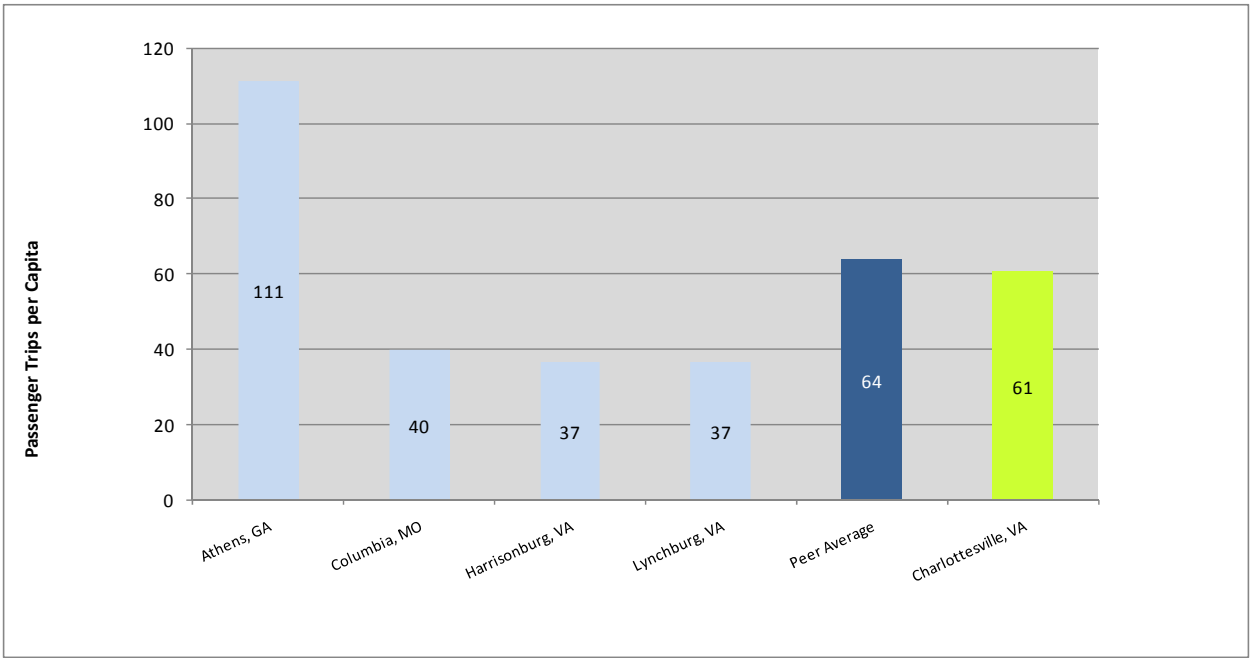
Average System Speed: The two university-based transit systems have the slowest paced systems as shown in Figure 5-9. This is to be expected of a system with high ridership that must also navigate a dense pedestrian environment. The fastest moving system was GLTC followed by Athens Transit. CAT, Columbia Transit and Harrisonburg Transit were very closely ranked, with speeds calculated very close to the peer average.

Figure 5-9
Average System Speed



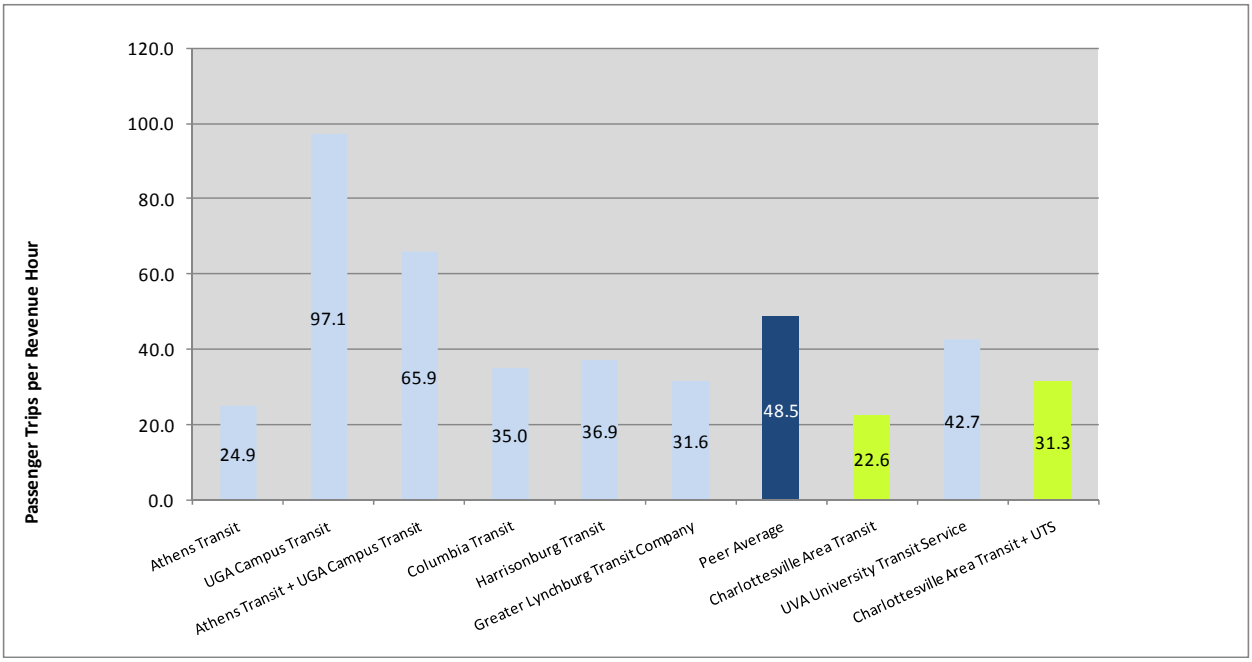
Passenger Trips per Capita: Charlottesville's utilization of CAT and UTS was only slightly lower than the peer average (Figure 5-10). Athens, which also features separate university-based and city-based transit systems, far exceeded the peer average. When Athens is excluded from the peer group, Charlottesville's utilization of transit is more than 50% higher than the remaining peers.

Figure 5-10
Passenger Trips per Capita



Passenger Trips per Revenue Hour: As shown in Figure 5-11, CAT's passenger trips per revenue hour fall blow all of its peers. When looking at both Charlottesville service combined, they too fall below the peer average. As in the previous measure, Athens and particularly the UGA Campus Transit system, perform exceptionally well. With this outlier removed, the two Charlottesville systems fall more closely in line with the remaining peers.

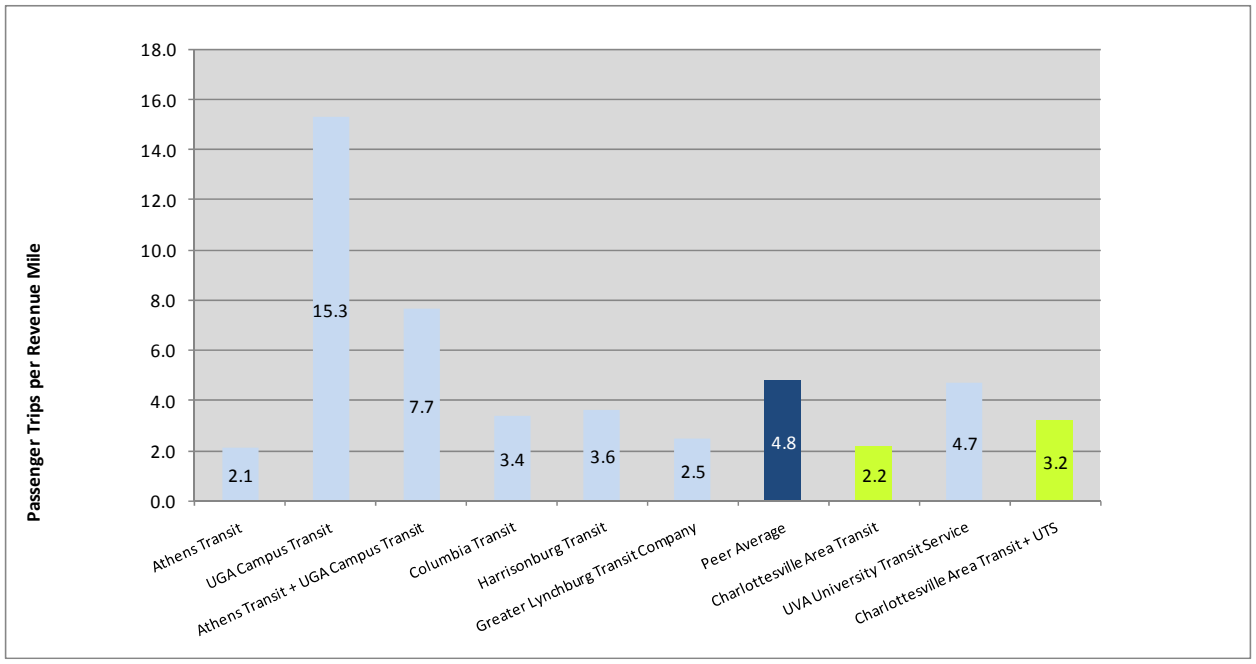
Figure 5-11
Passenger Trips per Revenue Hour



Note: Peer Average does not include Athens Transit and UGA Campus Transit as stand-alone agencies

Passenger Trips per Revenue Mile: As with revenue hours, Charlottesville's (both CAT and UTS) passenger trips per revenue mile fell below the peer average (see Figure 5-12). However, this was somewhat skewed by the exceptional performance of UGA Campus Transit in Athens. With Athens removed, CAT performs comparably or slightly below the remaining peers.

Figure 5-12
Passenger Trips per Revenue Mile

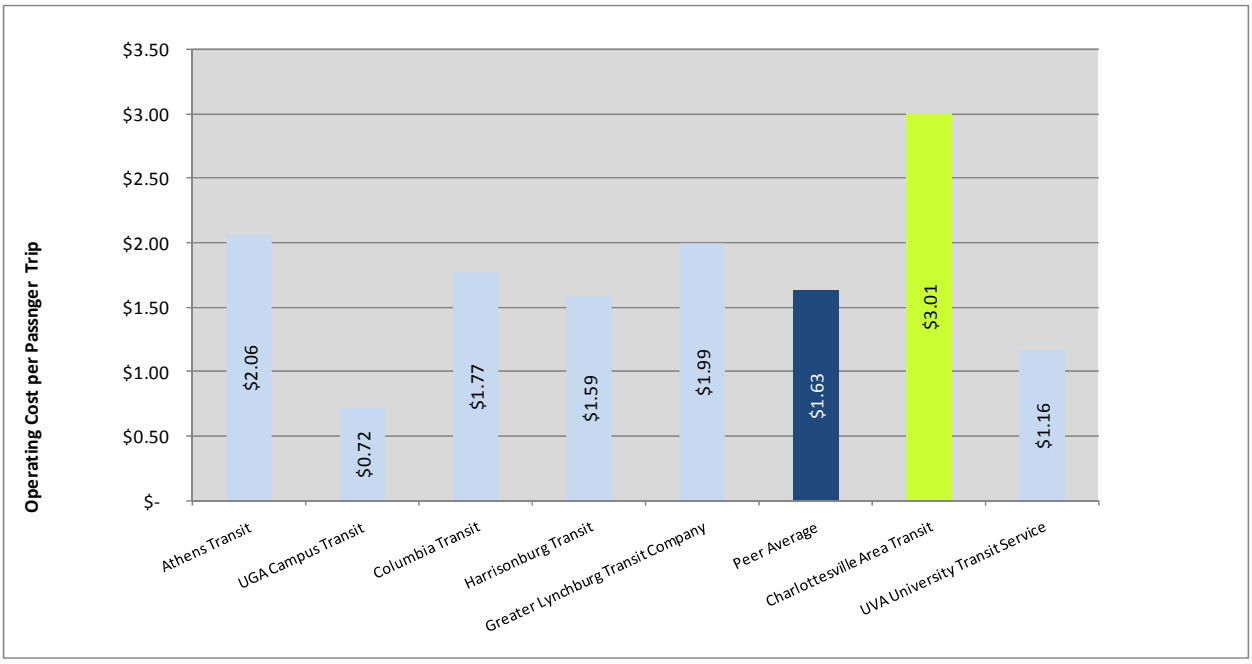


Note: Peer Average does not include Athens Transit and UGA Campus Transit as stand-alone agencies

5.4 Cost Efficiency

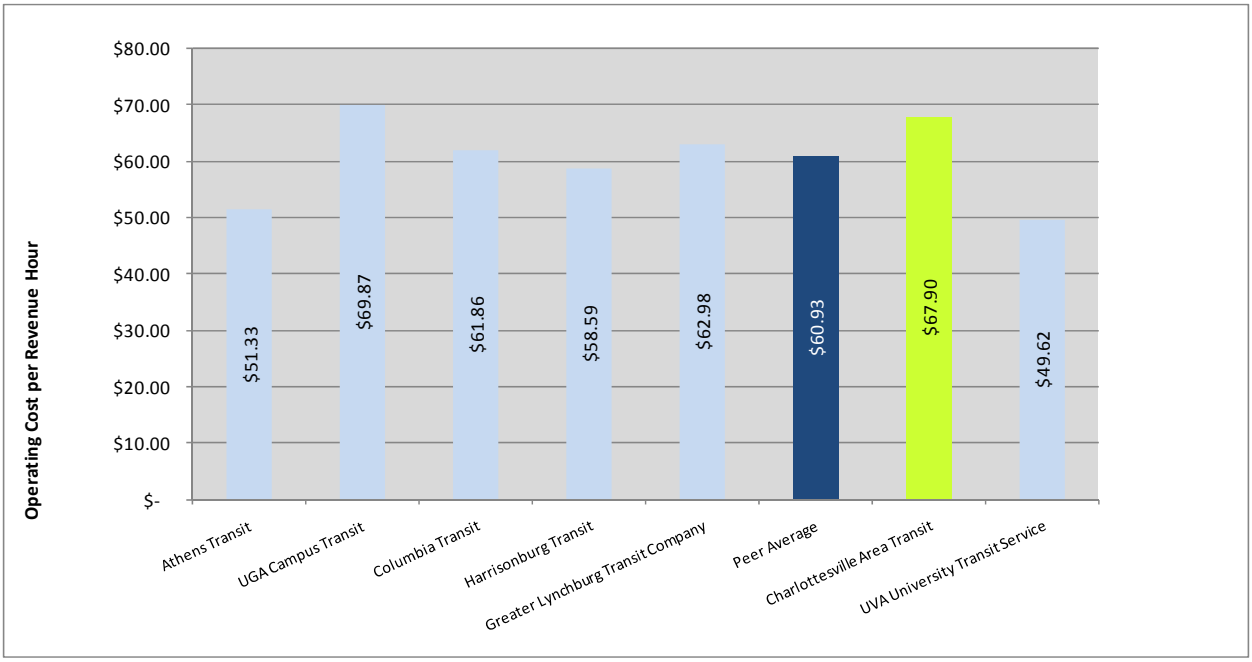
Operating Cost per Passenger Trip: As shown in Figure 5-13, CAT's operating cost per passenger trip is the highest of all the peers at $3.01. The two university-based transit systems (UGA Campus Transit and UTS) boasted the lowest operating cost per trip. Their success can be directly attributed to the high number of passenger loads operating at maximum capacity.

Figure 5-13
Operating Cost per Passenger Trip



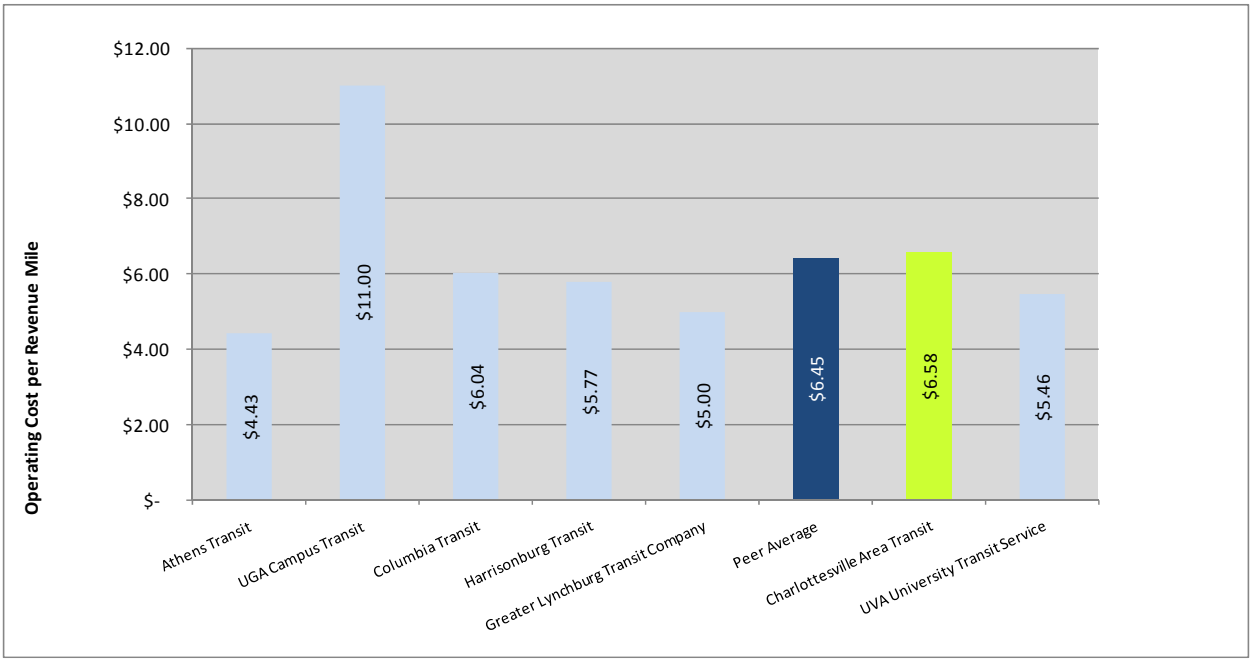
Operating Cost per Revenue Hour: When comparing cost per revenue hour, CAT becomes much more comparable to its peers (see Figure 5-14). UTS' operating costs were the lowest. However, it should also be noted that UTS does not participate in the National Transit Database (NTD).; thus, operating costs that are traditionally reported by the other providers may be attributed to outside cost centers within the university. The next lowest cost per hour was reported by Athens Transit whose structure and relationship with the university is the most similar to CAT. The highest cost per revenue hour was recorded by UGA Campus Transit.

Figure 5-14
Operating Cost per Revenue Hour



Operating Cost per Revenue Mile: When comparing cost per revenue mile, CAT is also comparable to its peers (see Figure 5-15). Athens Transit's operating costs were the lowest, followed by GLTC and then UTS. The highest cost per revenue mile was recorded by UGA Campus Transit.

Figure 5-15
Operating Cost per Revenue Mile



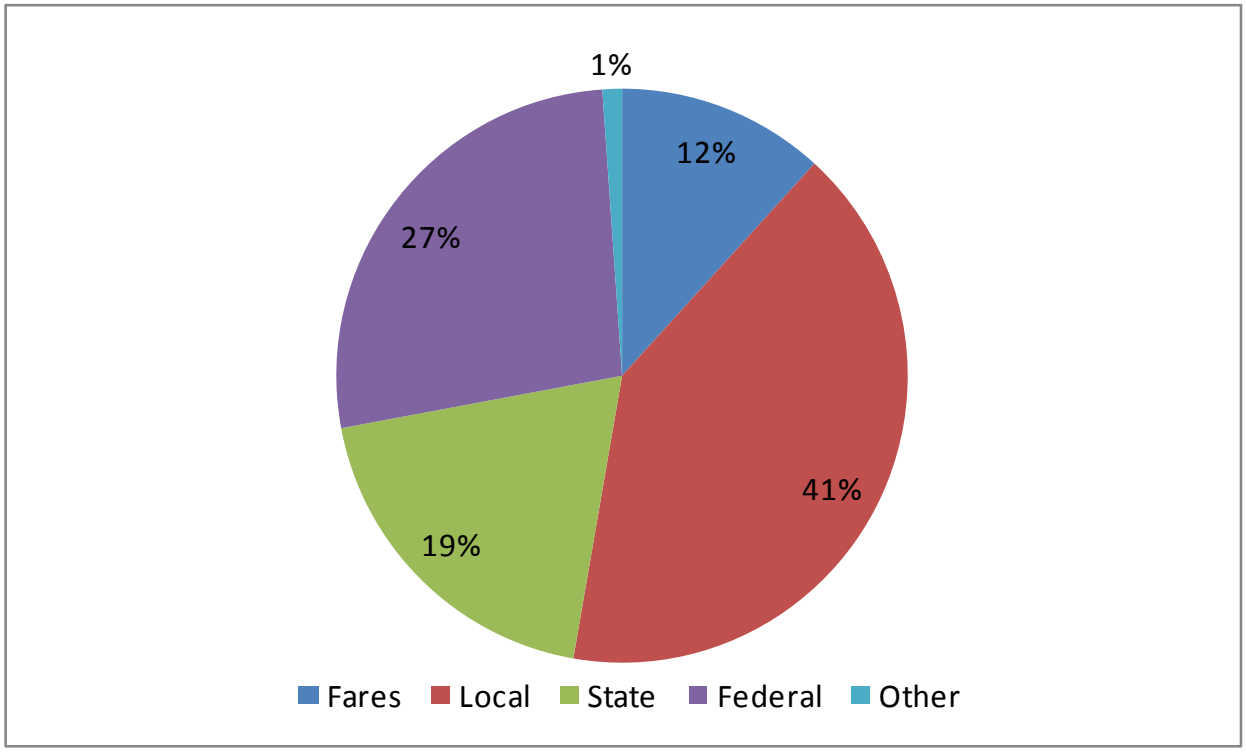
6 Financial Analysis

The sections below highlight the revenue sources used by CAT and its peers to fund O&M and capital costs. It is important to note that the data utilized for the following analysis provides an indication of the range of funding sources used by CAT and the peer transit systems for only FY 2009. While levels and sources of funding used for O&M tend to be relatively consistent from year to year, annual capital funding levels and sources can vary significantly – depending on the capital projects and grant sources occurring in a particular year.

6.1 Funding Sources Used for O&M

Figure 6-1 illustrates the key revenue sources used by CAT to fund its O&M costs. As shown in the figure, CAT relied primarily on local funds, about 41 percent, followed by federal funds (27 percent), state funds (19 percent) and then farebox revenues (12 percent). Only 1 percent of CAT's funding came from other sources such as advertising revenue.

Figure 6-1
CAT O&M Funding by Major Source



Figures 6-2 and 6-3 provide an overview of the total level of O&M funding used by CAT and its applicable peers. The figures also illustrate the relative reliance of each agency on the following sources:

- Fares and other directly generated funds
- Local sources
- State sources
- Federal sources
- Other transit funding sources

As shown in Figures 6-2 and 6-3, the total annual O&M cost of the agencies ranges from approximately $3.2 million at Harrisonburg Transit to $6.4 million at GLTC. With a total annual O&M cost of $6.2 million (in 2009), CAT was one-third higher than the peer average of $4.6 million. A more detailed analysis of these amounts and percentages is presented later in this section.

Figure 6-2
Summary of Funding Used for O&M (2009 Dollars)

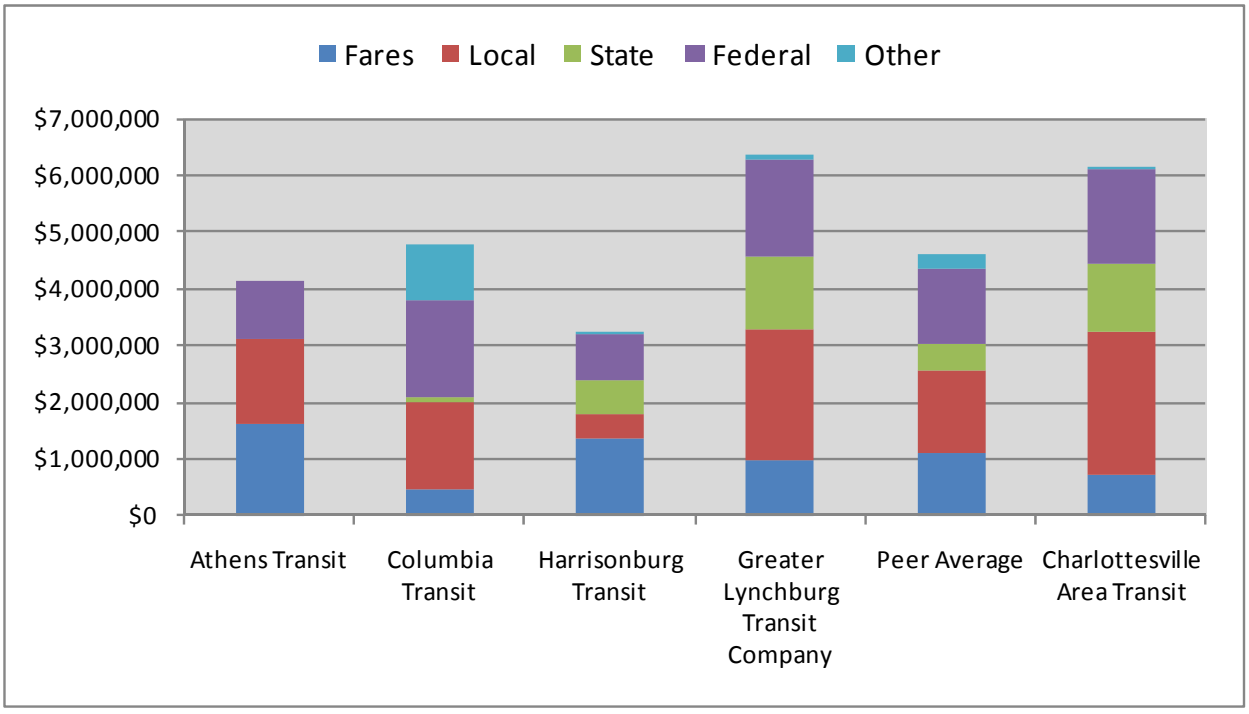
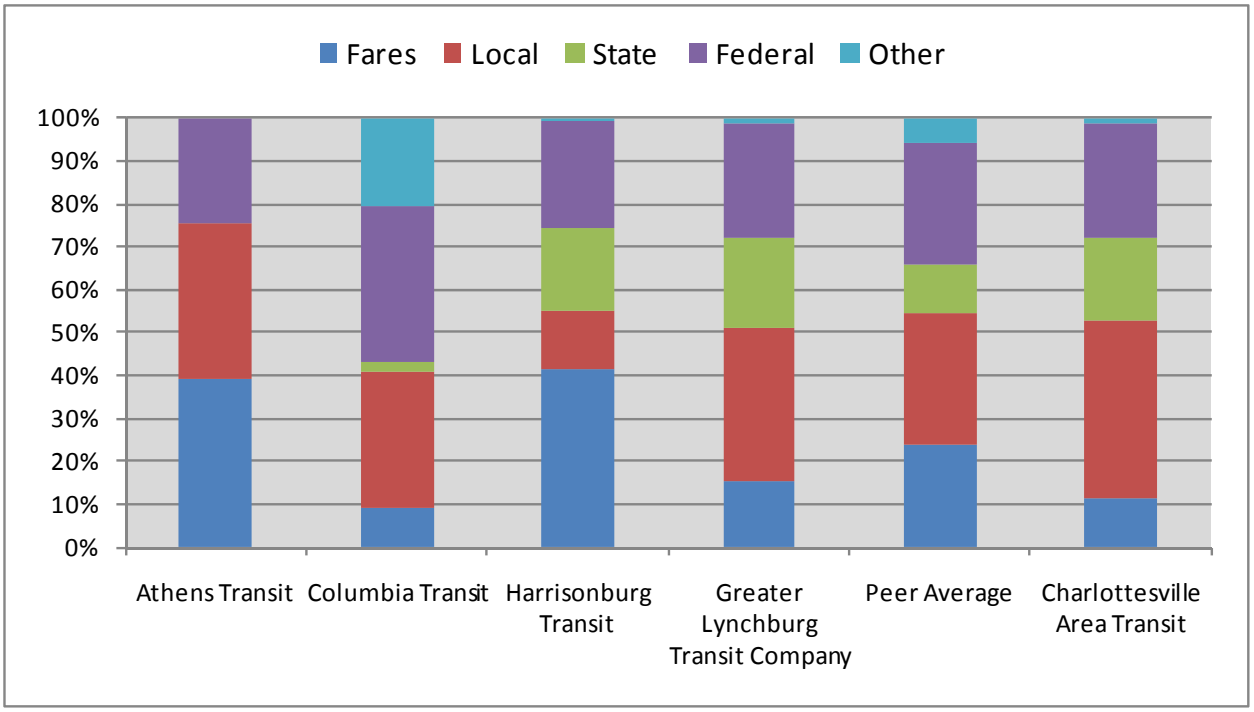


Figure 6-3
Summary of Funding Used for O&M (%)



Farebox Revenues for O&M: Transit agencies collect fares for the services they provide. The extent to which fares cover O&M costs is referred to as the farebox recovery rate. As shown in Figures 6-4 and 6-5, the farebox recovery rate of CAT and its peers ranged from 9 percent to 42 percent. Harrisonburg Transit reported the highest recovery rate while Columbia Transit reported the lowest. The peer average farebox recovery rate was 24 percent. With its 12 percent bus farebox recovery rate CAT falls well below the peer average.

Figure 6-4
O&M Funding from Fares

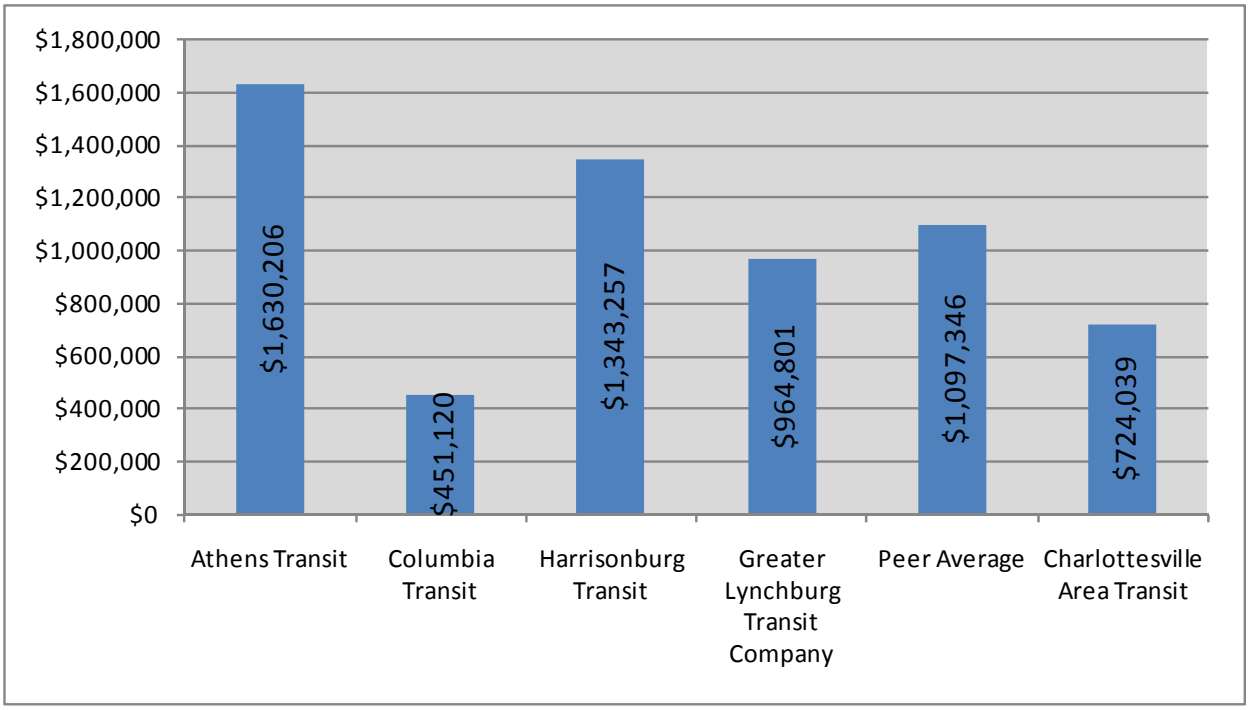
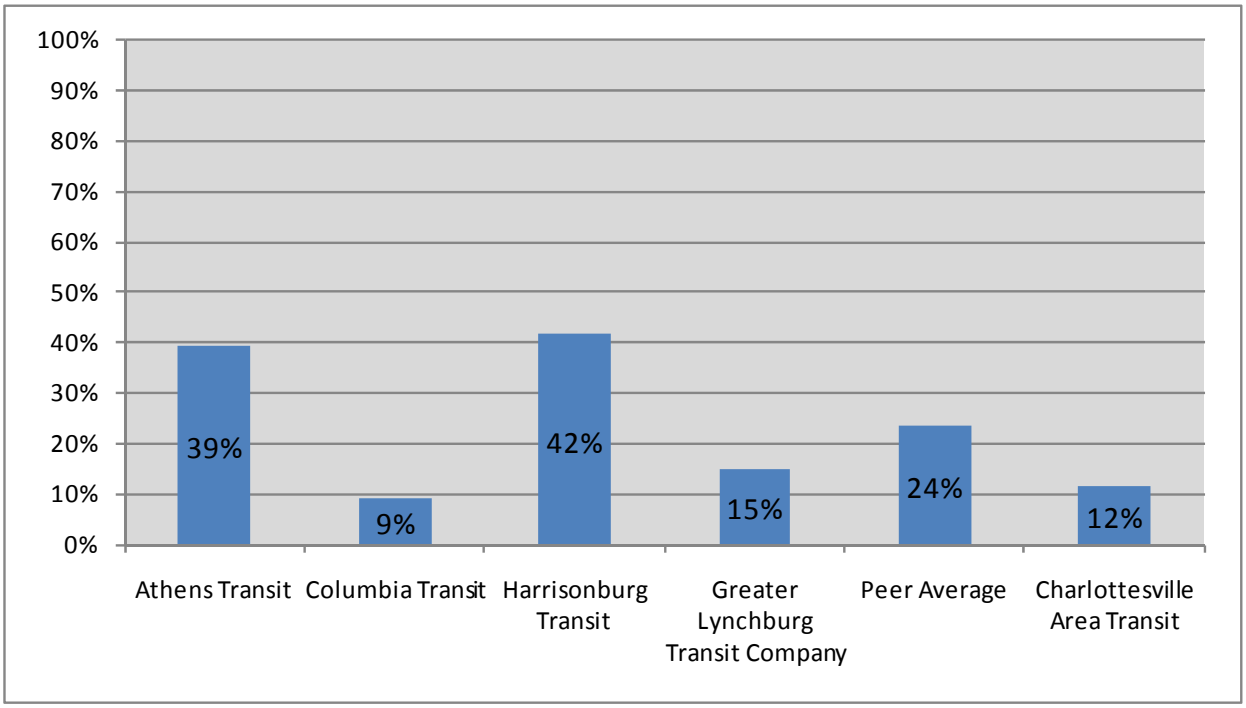


Figure 6-5
O&M Funding from Fares (Farebox Recovery Rate)



Local Sources for O&M: Local agencies that receive transit service generally provide local funding to pay a portion of the transit O&M costs not paid through fares and from federal and state grants. These funds may be in the form of local funding and/or in the form of local funding that is dedicated at its source for transit use. In the first case, local funding from various sources is provided to the transit agency by the local jurisdiction. In the second case, local funding specifically designated for transit use is either received directly by the transit agency or received by the local jurisdictions and contributed to the transit agency in payment for service. In the former, local funding is generally derived from local sales, property, and/or gas taxes.

As shown in Figure 6-6, local funding ranged from less than $½ million to more than $2.5 million. This translates to between 13 and 41 percent of each agency's O&M costs. The peer average was slightly less than $1.5 million or 31 percent of total O&M costs. By comparison, CAT's local contribution is higher than the peer average.

Figure 6-6:
O&M Funding from Local Sources

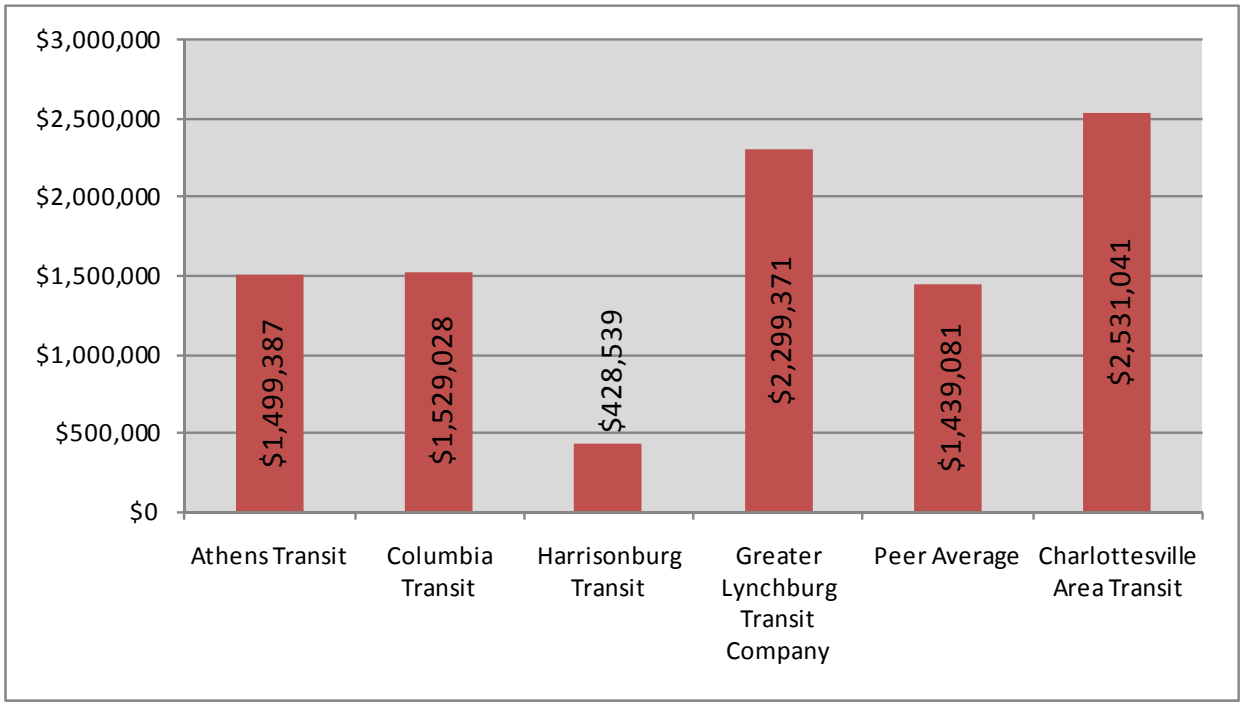
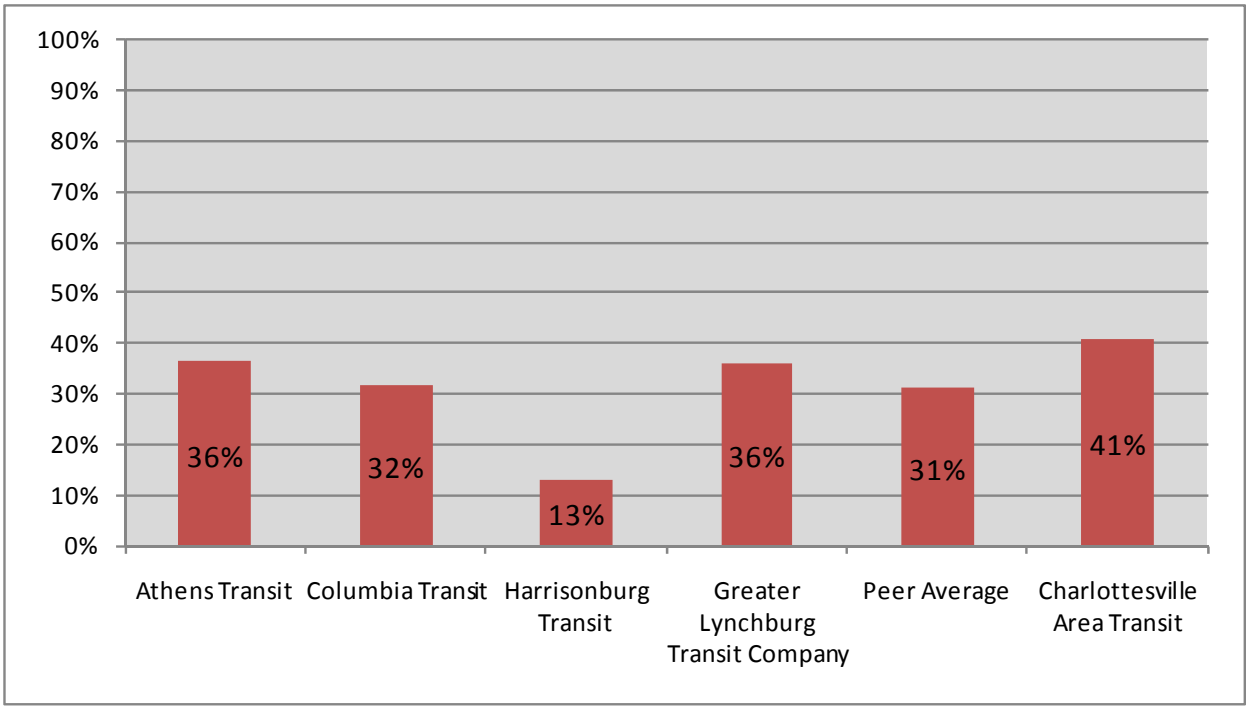


Figure 6-7:
Percent of O&M Funding from Local Sources



State Sources for O&M: **F**unding programs for transit vary by state. As shown in Figures 6-8 and 6-9, the reliance on state O&M funding sources demonstrated by CAT and its peers ranged from no participation (Athens Transit) to 21 percent (GLTC). The average reliance on state sources was 11 percent. Agencies in Virginia fared the best with the commonwealth contributing 19 to 21 percent of the total O&M costs.

Figure 6-8
O&M Funding from State Sources

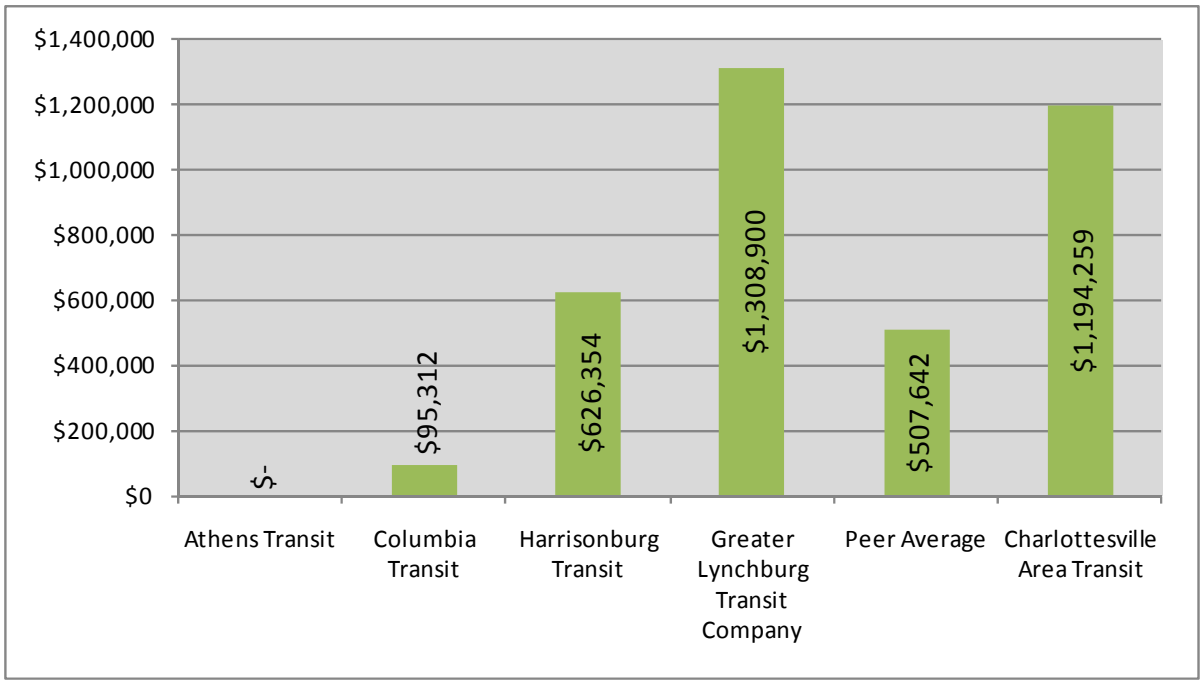
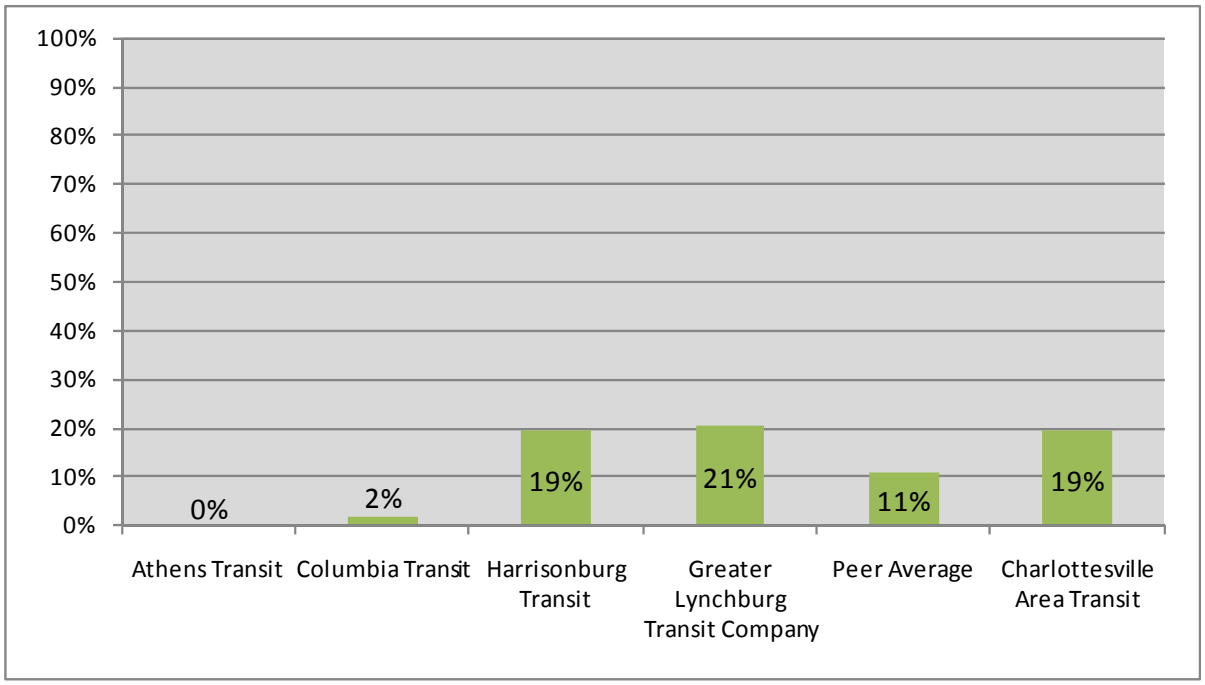


Figure 6-9
Percent of O&M Funding from State Sources



Federal Sources for O&M: As shown in Figures 6-10 and 6-11, the reliance on federal O&M sources demonstrated by CAT and its peers was fairly consistent, ranging from 24 percent to 36 percent, with an average of 28 percent. With its 27 percent reliance on federal sources, CAT was comparable to the peer average.

Figure 6-10
O&M Funding from Federal Sources

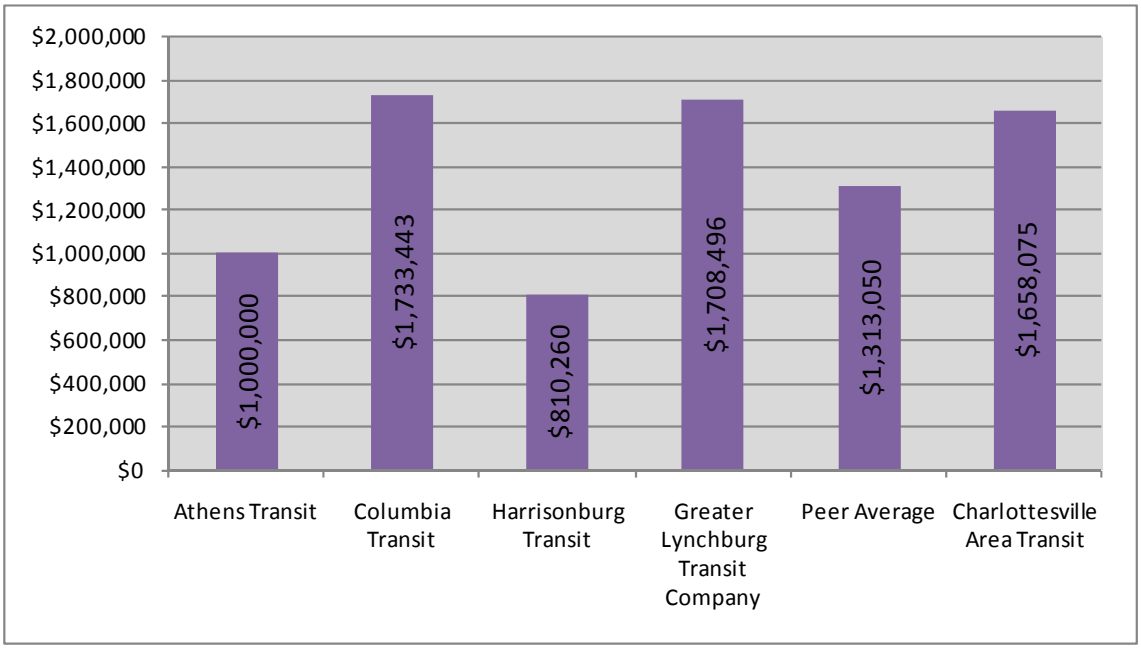
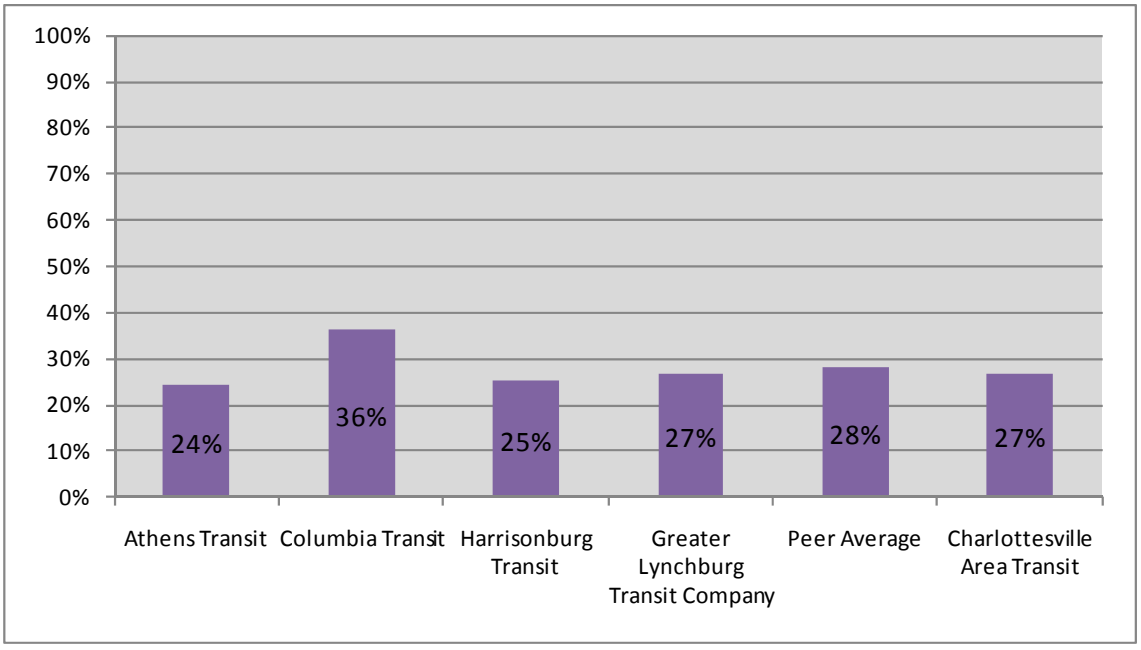


Figure 6-11
Percent of O&M Funding from Federal Sources



Other Sources for O&M: Many transit agencies receive other sources of income for O&M such as advertising or property leases. As shown in Figures 6-12 and 6-13, other income ranged from none (Athens Transit) to 21 percent (Columbia Transit). The average reliance on other sources was 6 percent. CAT's reliance on other income sources was minimal at only 1% of O&M costs.

Figure 6-12
O&M Funding from Other Sources

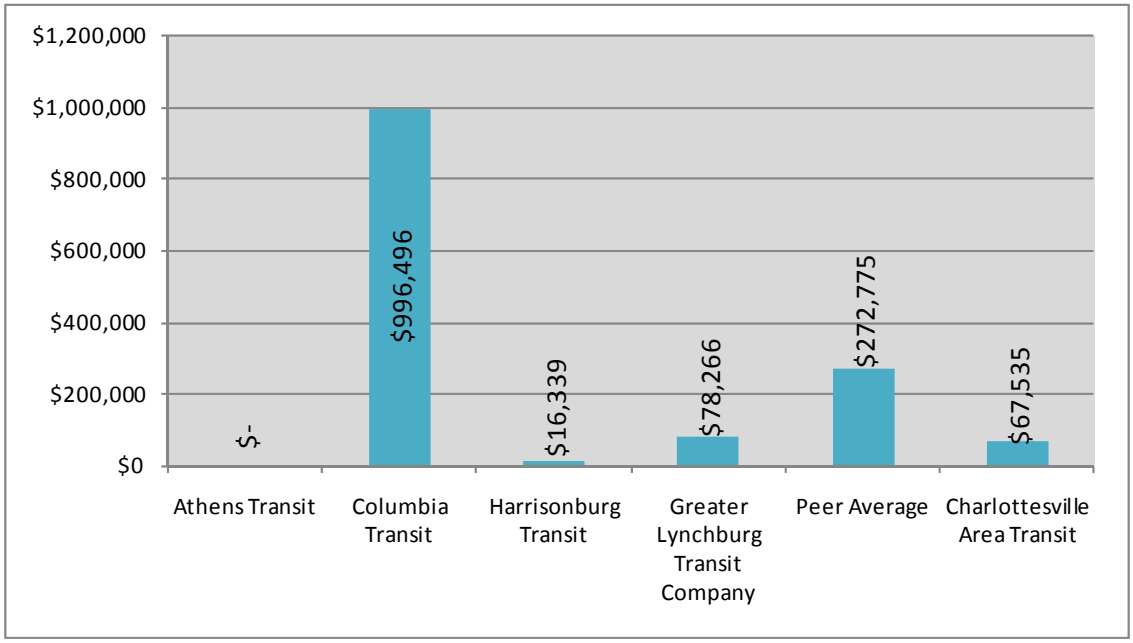
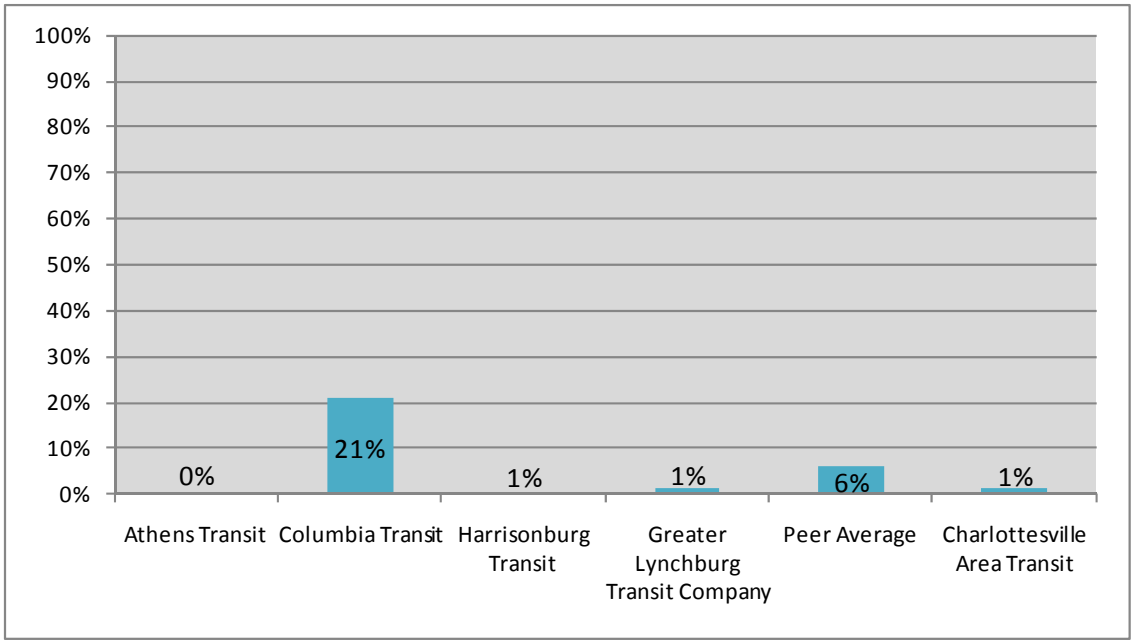


Figure 6-13
Percent of O&M Funding from Other Sources



6.2 Funding Sources Used for Capital

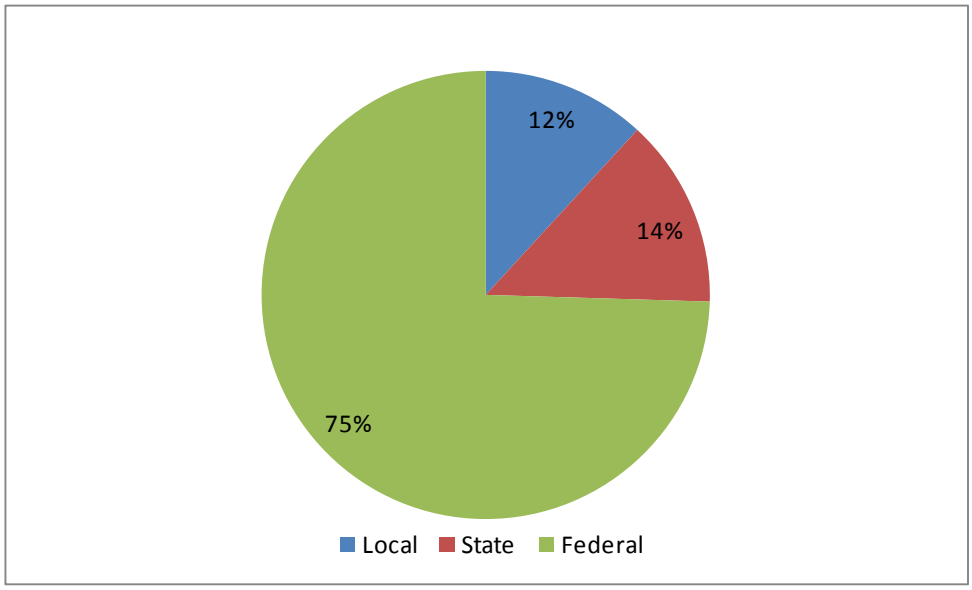
While funding levels and sources used for O&M remain relatively consistent from year to year, capital expenditure levels and sources can vary significantly from year to year, depending on the particular projects underway and the grants available. Thus, the information on capital funding levels and sources described below reflects a snapshot for 2009, the most recent year for which data is available from the NTD.

Figure 6-14 illustrates the key revenue sources used by CAT to fund its capital costs in 2009. As shown in the figure, CAT relied primarily on federal capital grant funds, with 75 percent of its capital revenues derived from this source. Local funds provided 12 percent and state funds provided 14 percent of capital funding.

Figures 6-15 and 6-16 provide an overview of the total level of capital funding used by CAT and its peers for 2009. The figures also illustrate the relative reliance of each agency on the following sources:

- Local sources
- State sources
- Federal sources

Figure 6-14
CAT Capital Funding by Major Source



As shown in Figures 6-15 and 6-16, the total annual capital cost expended by the agencies for the 2009 NTD year ranged from just under $42,000 to more than $6 million. With a total annual capital expenditure of approximately $5.4 million (in 2009), CAT was well above the peer average of $2.9 million.

Figure 6-15
Summary of Funding Used for Capital (2009 Dollars)

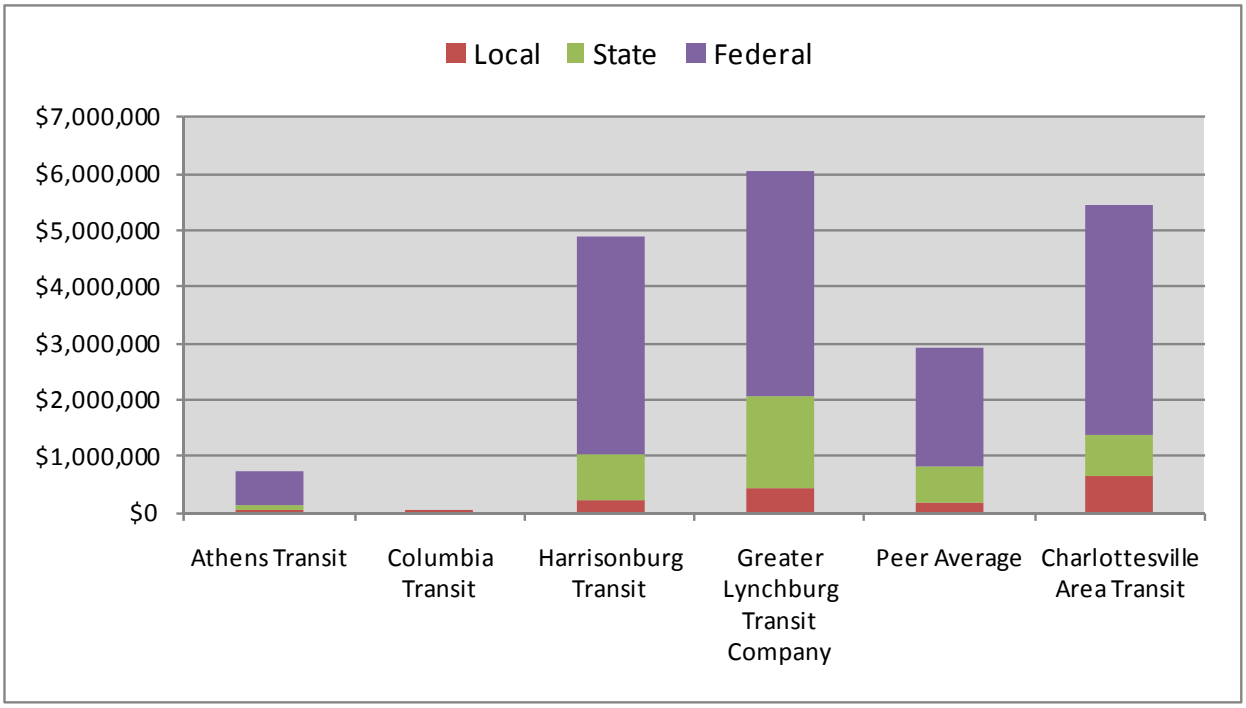
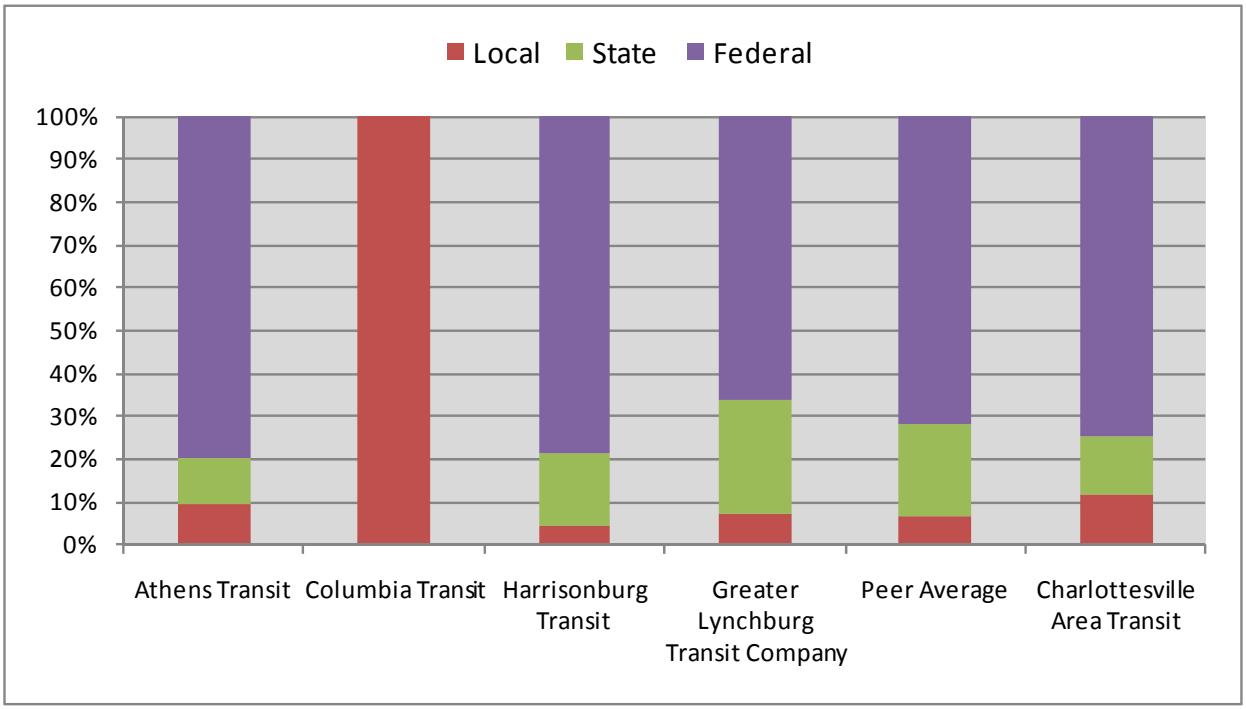


Figure 6-16
Summary of Funding Used for Capital (%)



Local Sources for Capital: As with O&M, local agencies that receive transit service may provide local funding to pay a portion of the transit capital costs not paid through federal and state grants. As shown in Figures 6-17 and 6-18, there is significant variation among the peers with respect to reliance on capital funding from local jurisdictions. Reliance on local sources ranged from 4 percent to 100 percent, with an average reliance on local sources of 6 percent.

Figure 6-17
Capital Funding from Local Sources

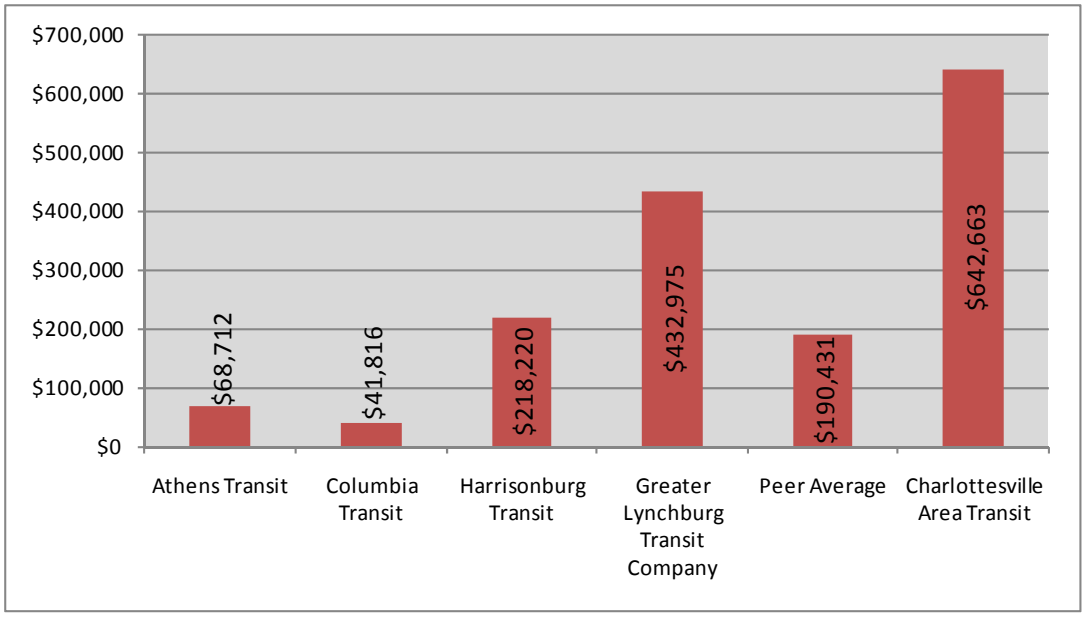
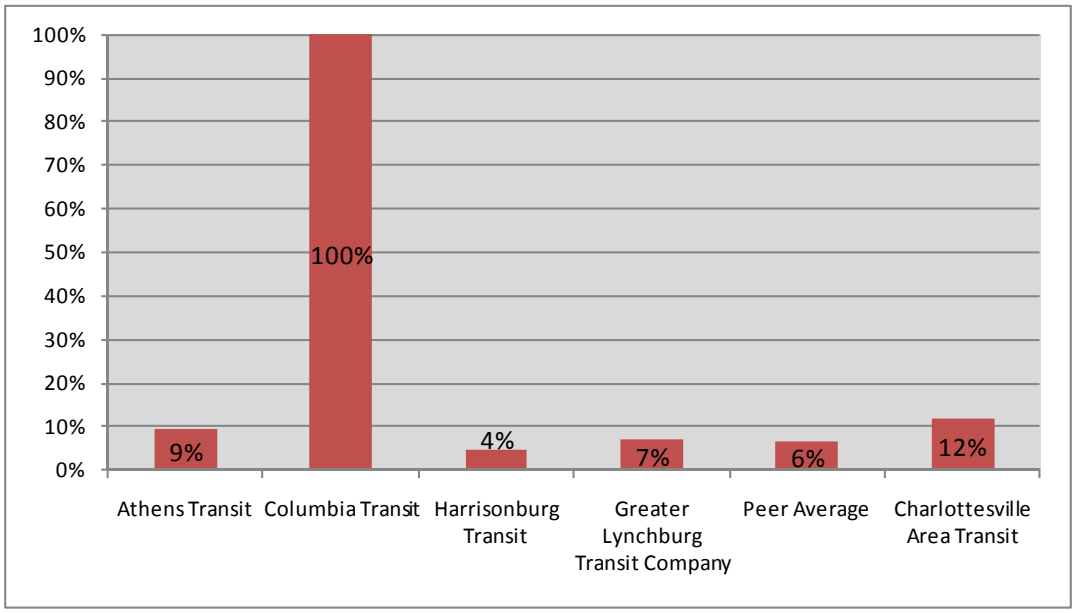


Figure 6-18
Percent of Capital Funding from Local Sources



State Sources for Capital: Special grant programs for transit vary by state. As with O&M, some states provide capital funding for transit while others do not. As shown in Figures 6-19 and 6-20, the reliance on state capital sources demonstrated by CAT's peers ranged from 0 percent to 27 percent, with an average reliance on state sources of 22 percent. CAT received 14 percent of its capital funding from state sources.

Figure 6-19
Capital Funding from State Sources

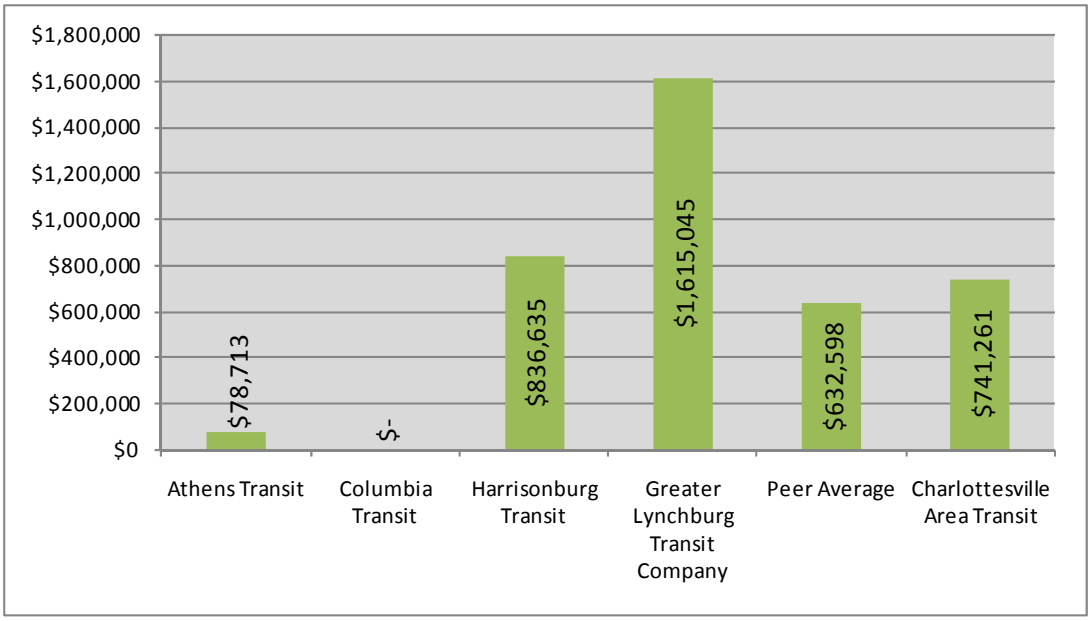
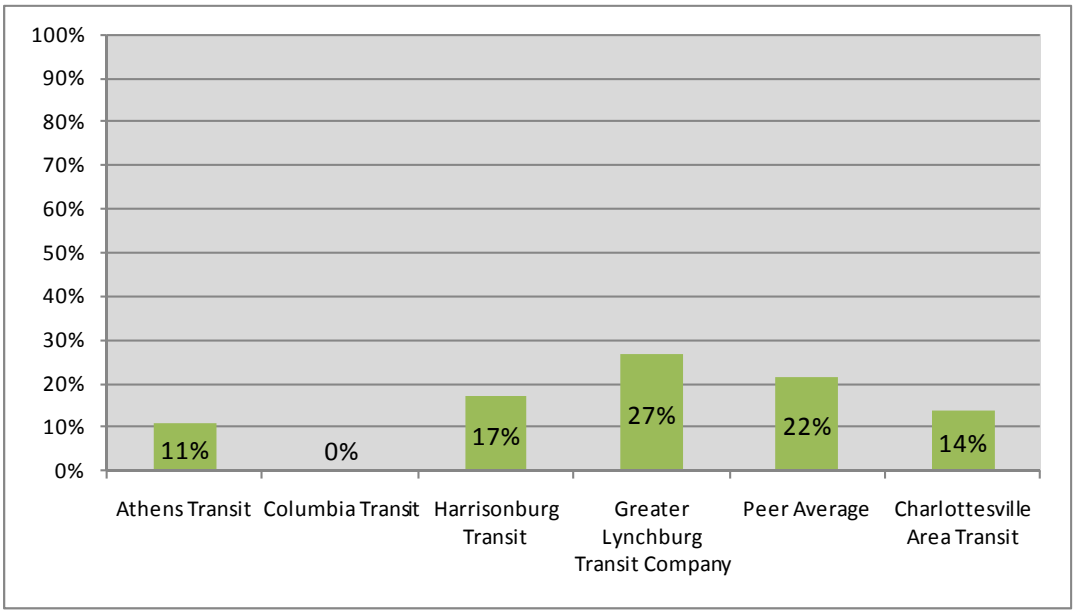


Figure 6-20
Percent of Capital Funding from State Sources



Federal Sources for Capital: Transit agencies receive grant funds from various federal programs, notably the FTA formula and discretionary grant programs. As shown in Figures 6-21 and 6-22, the reliance on federal capital sources demonstrated by CAT and its peers ranged from no participation to 80 percent, with a peer average of 72 percent. With its 75 percent reliance on federal sources, CAT was slightly higher than the peer average.

Figure 6-21
Capital Funding from Federal Sources

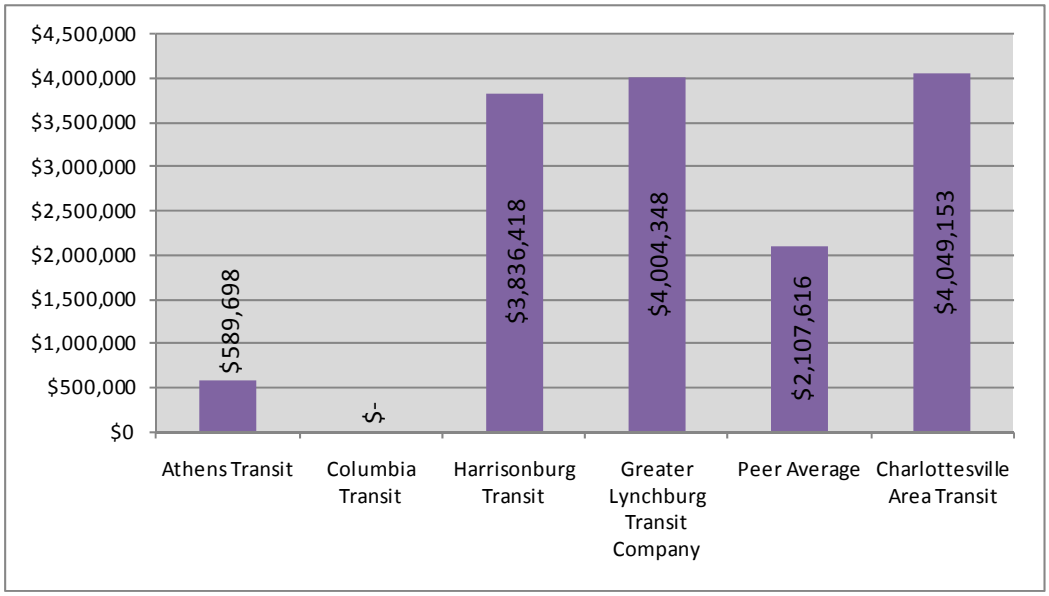
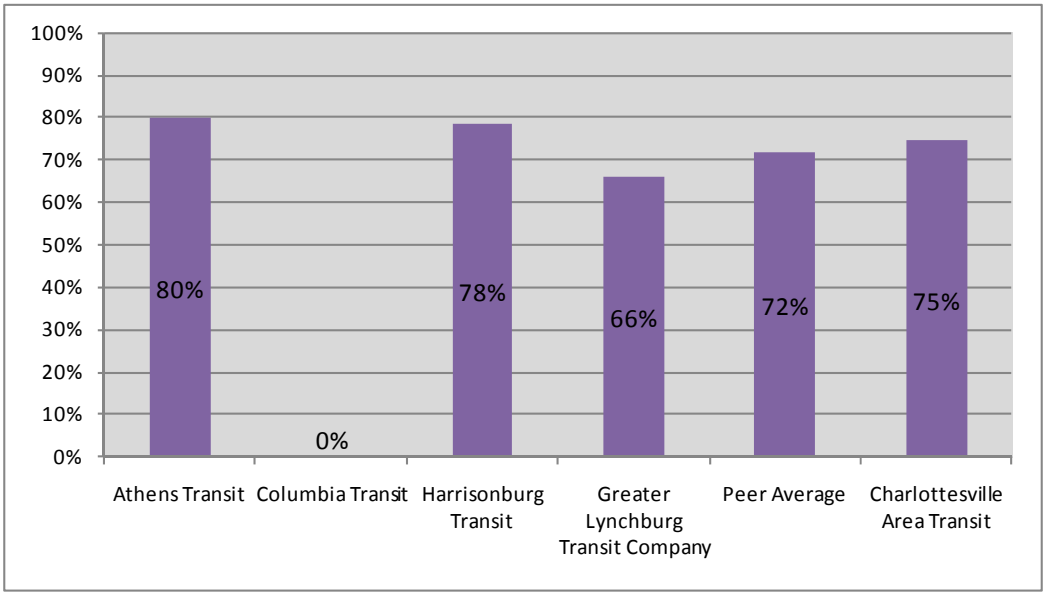


Figure 6-22
Percent of Capital Funding from Federal Sources



7 Key Findings

This *Peer Analysis* has compared Charlottesville Area Transit (CAT) to four peer communities with respect to operational and financial characteristics and performance. The Federal Transit Administration's (FTA) National Transit Database (NTD) was the primary source of data for the respective peer systems, with the most recently available data (2009) used in the analysis. In the absence of NTD data (University Transit Service), comparable reports were obtained directly from the agency if available.

The communities and their respective transit agencies selected as peers to CAT are:

- Athens, GA (Athens Transit and UGA Campus Transit);
- Columbia, MO (Columbia Transit);
- Harrisonburg, VA (Harrisonburg Transit); and
- Lynchburg, VA (Greater Lynchburg Transit Company).

In general, CAT's ridership, service and financial characteristics did not differ significantly from the peer systems. Key findings were as follows:

- ***Operating Budget:*** CAT's operating budget of approximately $6.2 million was one-third higher than the peer average of $4.6 million. Of the four peer systems, GLTC in Lynchburg was the most similar to CAT with respect to size of the annual operating budget.

- ***Capital Budget:*** CAT's 2009 capital budget was the second highest ($5.4 million) compared to the 2009 peer average. Only GLTC in Lynchburg budgeted more at $6.1 million.

- ***Ridership:*** CAT's and UTS' combined system ridership (4,929,934) was approximately 8.6 percent higher than the peer average (4,540,696)

- ***Service Area Characteristics:*** CAT's service area (38 square miles) is nearly 9 percent larger than the peer average square miles (35 square miles). Its service area population (81,449) is about 24 percent larger than the peer average (65,747). CAT's service area population density (2,143 persons per square mile) is about four percent lower than the peer average (2,232 persons per square mile).

- ***Vehicle Utilization:*** CAT's and UTS' fleet size and peak utilization was greater than the peer average but very similar to Athens Transit and UGA Campus Transit. CAT also ran more revenue hours and revenue miles per peak vehicle than the peer average. The average age of CAT's fleet was similar to its peers.

- ***Service Supplied:*** CAT and UTS operate more revenue-hours and revenue-miles per capita than the peer average. CAT and UTS also operate far more revenue hours and revenue miles per square mile than the peer average.

- ***Service Productivity:*** CAT's average system is similar to the peer systems, excluding the exclusive on-campus services. CAT's service productivity was lowest among the peer systems when compared on a revenue hour basis. CAT's productivity was also among the lowest on a revenue mile basis.

- ***Cost Efficiency:*** CAT's cost efficiency characteristics were weak when compared to the peer systems. Its operating cost per passenger trip was nearly twice the peer average and operating cost per revenue hour was nearly $6 higher than the peer average. However, CAT's cost per revenue mile was very comparable to its peers.

- ***Farebox Revenues:*** CAT's farebox revenue generated about half the rate of the peer average (12% vs. 24%). Only Columbia Transit pulled a lower percentage from the farebox.

- ***Source of O&M Funds:*** CAT had similar characteristics to the peer systems with regards to the percent of funding that comes from federal and state sources. While farebox revenues were less pronounced, these funds were offset by increased local contributions.

- ***Source of Capital Funds:*** CAT's capital funding was very similar to its peer systems in Virginia. However when the agencies outside of the commonwealth were factored in, their capital funds received from federal sources were well above the peer average.

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #7: Latent Demand Analysis

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

February 2011

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

The purpose of this report is to identify potential opportunities for service expansions and improvements in the CAT service area and beyond. The CAT service area includes the City of Charlottesville along with portions of Albemarle County. The analysis in this chapter will focus on these areas with existing service.

This Latent Demand Analysis has utilized the following information:

- 2000 U.S. Census and 2007-2009 American Community Survey demographic data for Albemarle County and the City of Charlottesville;
- Population, and employment estimates for 2007 and projections for 2025 provided by the Thomas Jefferson Planning District Commission (TJPDC);
- 2007 person trip tables from the TJPDC travel demand model to determine concentrations of person trip origins and destinations;
- Longitudinal Employer Household Dynamics (LEHD) data from the U.S. Census (2008) to determine employee home locations for major employment areas; and
- A review of transit assessment corridors and areas from the recent Regional Transit Authority (RTA) work conducted for the TJPDC

Results of this analysis and prior work review were used to develop a list of potential new transit markets that should be considered in this project's service planning efforts.

2 Recent Demographic Trends

Recent population, household and employment trends were determined through a review of 2000 Census and recent American Community Survey (ACS) information. Table 2-1 presents this information for Albemarle County and Charlottesville. ACS data represents a sampling between 2007 and 2009, and reflects an average over this time period. Population has been broken out by age group.

Table 2-1: Population, employment & socioeconomic data for TJPDC area

	Albemarle County			Charlottesville			2000	2007-2009	Percent
	2000	2007-2009	% Change	2000	2007-2009	% Change	Total	Total	Change
Total Population	**79,236**	**93,982**	**18.6%**	**40,099**	**41,700**	**4.0%**	**119,335**	**135,682**	**13.7%**
Age Under 19	21,232	25,855	21.8%	10,535	8,854	-16.0%	31,767	34,709	9.3%
Age 20 to 24	4,209	7,336	74.3%	9,085	9,662	6.3%	13,294	16,998	27.9%
Age Under 24	25,441	33,191	30.5%	16,430	18,516	12.7%	41,871	51,707	23.5%
Age Over 65	9,920	11,799	18.9%	4,048	5,777	42.7%	13,968	17,576	25.8%
Households	**31,876**	**36,918**	**15.8%**	**14,999**	**17,343**	**15.6%**	**46,875**	**54,261**	**15.8%**
Without a Vehicle	1,416	1,624	14.7%	2,128	2,069	-2.8%	3,544	3,693	4.2%
Below Poverty	2,233	3,316	48.5%	3,414	4,030	18.1%	5,647	7,346	30.1%
Employment	**41,043**	**75,972**	**85.1%**	**21,919**	**35,841**	**63.5%**	**62,962**	**111,813**	**77.6%**

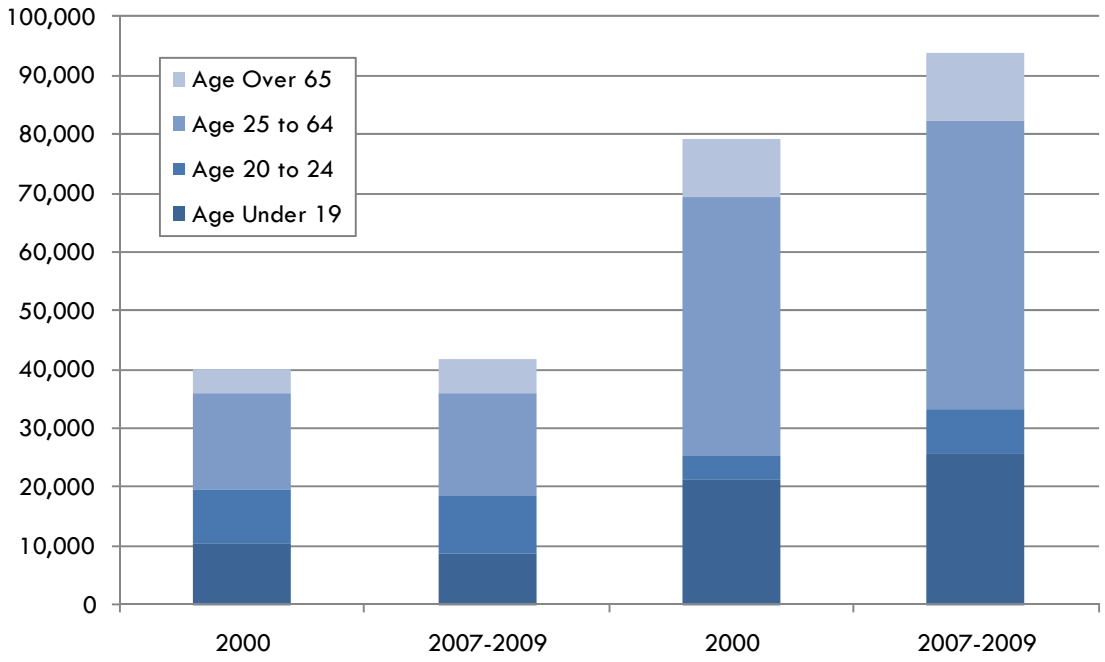
The most recent ACS data reflects a total population for Charlottesville and Albemarle County of 135,632. Of the total population in Charlottesville and Albemarle County, 31% resides in the city while the remaining 69% resides in the county. Figure 2-1 illustrates the age categories for Charlottesville and Albemarle County for years 2000 and 2007-2009. The population for Albemarle County increased by nearly 19% between 2000 and the Census period between 2007 and 2009 while Charlottesville saw a 4% increase during the same time period. It is important to note that the 2000 population shown for Charlottesville is an adjusted population. The reported population in the 2000 Census was 45,049. However, the City of Charlottesville disputed that number due to an issue related to student housing. A revised population of 40,099 is now used as the reported 2000 population. Figures related to population by age and households have been adjusted proportionately in Table 2-1. It is also important to note that the 2007-2009 population shown for Charlottesville is based on available ACS sampling data, and that the US Census has just released a 2010 population of 43,475 for Charlottesville.

The population under the age of 24 within Charlottesville represents nearly 45% of that city's total population; that age group for Albemarle County is 35% of the county's total population. Those aged 65 and over comprise nearly 14% of Charlottesville's total population and 13% of Albemarle County's total population.

Households have increased at a slightly higher rate than total population, thus reflecting slightly lower average persons per household. Households without a vehicle have seen a decline, but households below poverty have seen an increase, with a large increase for households in Albemarle County.

Employment has increased substantially since 2000, with a higher percent increase in Albemarle County. This could reflect more persons per household working and/or an increase in Albemarle County employment of workers that reside outside of Albemarle County.

Figure 2-1: Charlottesville and Albemarle County population by age group, 2000 and 2007-2009



It is of course also important to note as part of Charlottesville's demographic trends that the City includes the University of Virginia. There are over 21,000 undergraduate and graduate students enrolled at UVA, with over 12,000 faculty and staff. Piedmont Virginia Community College (PVCC) is also located in Albemarle County, near I-64 and Hwy 20. This is a 2-year college with 5,500 full and part-time students, and about 400 full and part-time faculty and staff.

3 Projected Demographic Trends

Population and employment data was obtained from the Thomas Jefferson Planning District Commission (TJPDC) to determine future year demographic trends for the Charlottesville area. Specifically, TJPDC provided population and employment data for 2007 (the model's base year) and 2025 (the most largely accepted future year demographic database at this time) by traffic analysis zone (TAZ) for the area covered by the agency's regional travel demand model. The travel demand model covers all of the City of Charlottesville and a large portion of Albemarle County, as shown in Figure 3-1. There are 248 total TAZs with 164 in Albemarle County and 84 within the city limits of Charlottesville.

Population and employment projections at the TAZ level were provided by the TJPDC and have been used to summarize demographic changes within the MPO planning area. Table 3-1 provides a summary of the projected changes in population and employment between 2007 and 2025 for the portions of Albemarle County within the TAZ coverage study area, as well as the City of Charlottesville. Overall, population and employment is projected to increase by 33%. However, growth in the county is expected to far surpass growth in the city by both measures and demographics. The county is expected to see at least an additional 37,000 people and 19,000 employees while the city is expected to grow by an additional 2,600 people and 3,200 employees.

Figure 3-1: Area Covered by Travel Demand Model TAZ Data

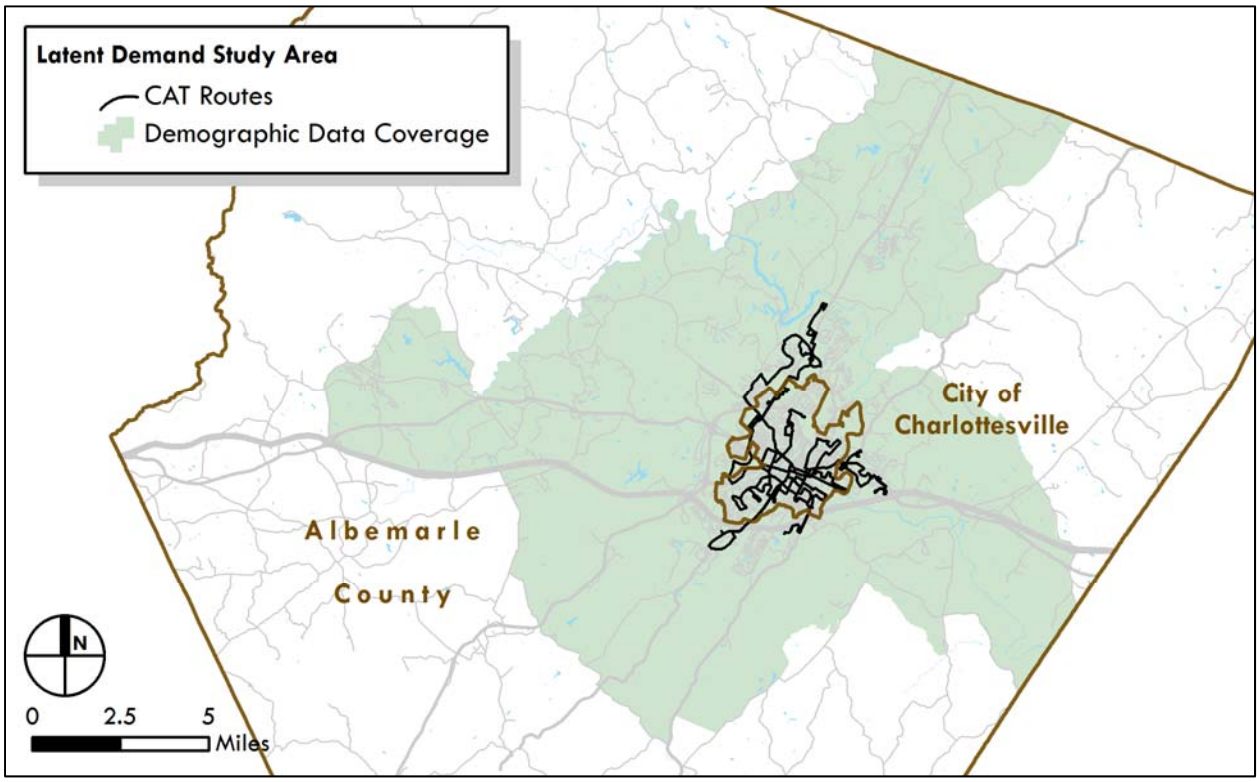


Table 3-1: TAZ Population and Employment Data for Albemarle County and Charlottesville

Area	TAZ Population			TAZ Employment		
	2007	2025	Change	2007	2025	Change
Albemarle County	76,186	113,090	48.4%	40,544	59,793	47.5%
Charlottesville	40,933	43,595	6.5%	26,292	29,545	12.4%
Total	117,119	156,685	33.8%	66,836	89,338	33.7%

3.1 Population Growth Projections

Figure 3-2 illustrates 2007 population densities by TAZ. Areas with the highest concentration are the southwestern University of Virginia area, around the central business district, northwest of US 29 and west of downtown. The southwestern university area ranges between 24 and 70 persons per acre, downtown ranges from 19 to 24, and along the US 29 corridor ranges from a low of around 1 to 2 up to 17 persons per acre behind Seminole Square Shopping Center. Areas of densest population are concentrated in the central, southern and western portions within the city limits. All of these areas appear to be well-served by transit access. Areas with higher than background population densities, but are not served by transit, include areas north of downtown, south of Interstate 64, northwest of the university and north along US 29 in the Forest Ridge area.

Figure 3-3 illustrates the 2025 estimated population densities by TAZ. As previously noted, the 2025 total population for the travel demand model's study area is 156,685 which is 33.8% higher than 2007 levels. Areas of increased density appear to have moved north-south along US 29 and north of the city, south and southwest of the city, and to the south, west and northwest of the city. Almost all of the increased areas of growth appear to occur outside of the city limits. Many of these areas do not currently have access to transit. Many portions of central and southern Charlottesville appear to have lost some population density.

Figure 3-4 presents the estimated change in population between 2007 and 2025 by TAZ. This figure further illustrates the anticipated loss in population south of downtown Charlottesville and UVA, and near the airport. Areas of population change with 1,500 or more people are: (1) west of Barracks Road Shopping Center (2,000 person gain closer in and 1,800 people in the area farther out); (2) east of Fashion Square Mall (3,200 people); and (3) east of the city along US 250 (1,600 person gain). Areas of gain between 500 and 1,000 people are immediately northeast of downtown, north along US 29 around Polo Ground and Proffit Roads and south and west of the university. Remaining areas of the city and surrounding county are expected to see moderate gains of up to 500 people.

Figure 3-2: 2007 Population Density

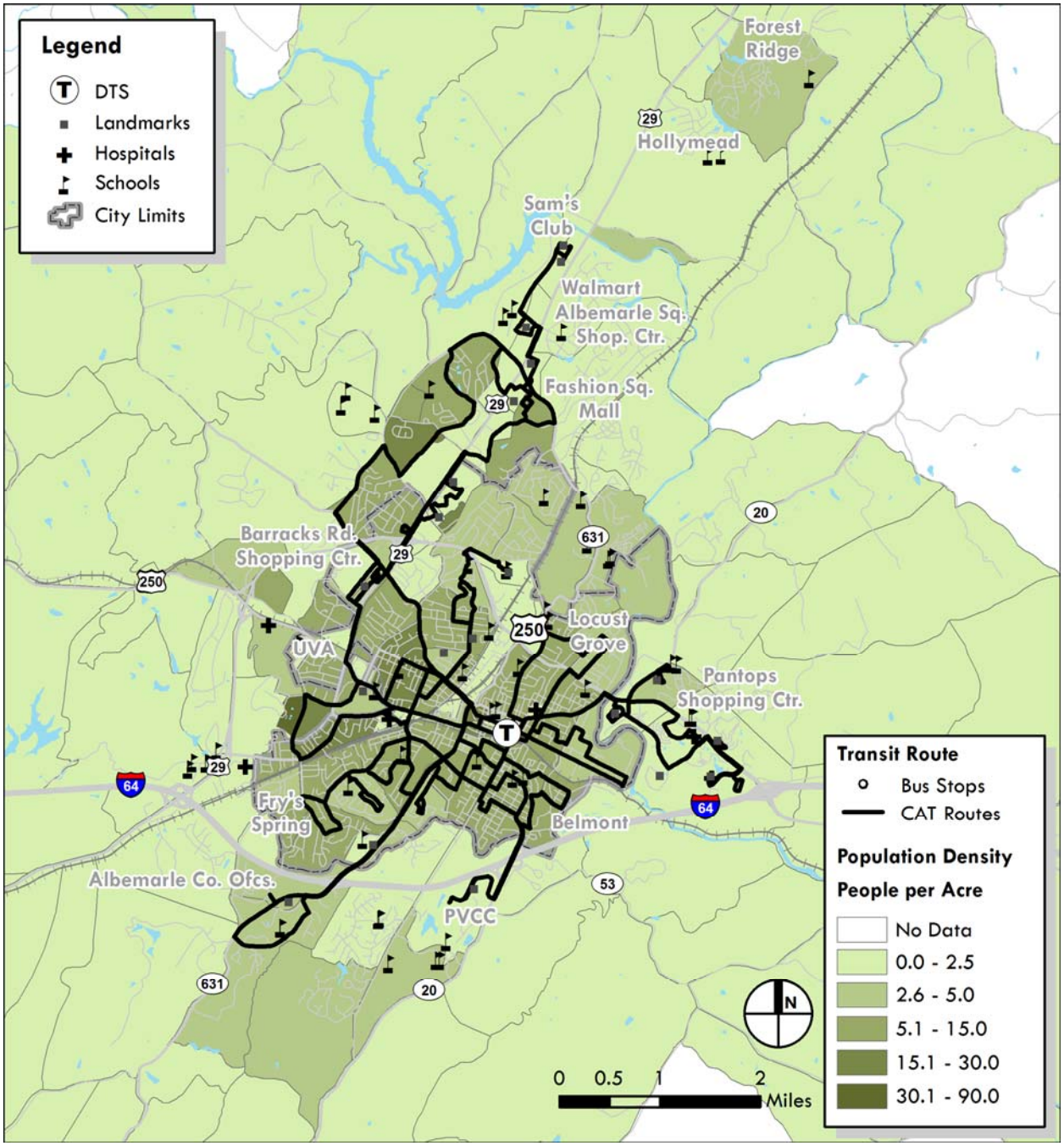


Figure 3-3: 2025 Population Density

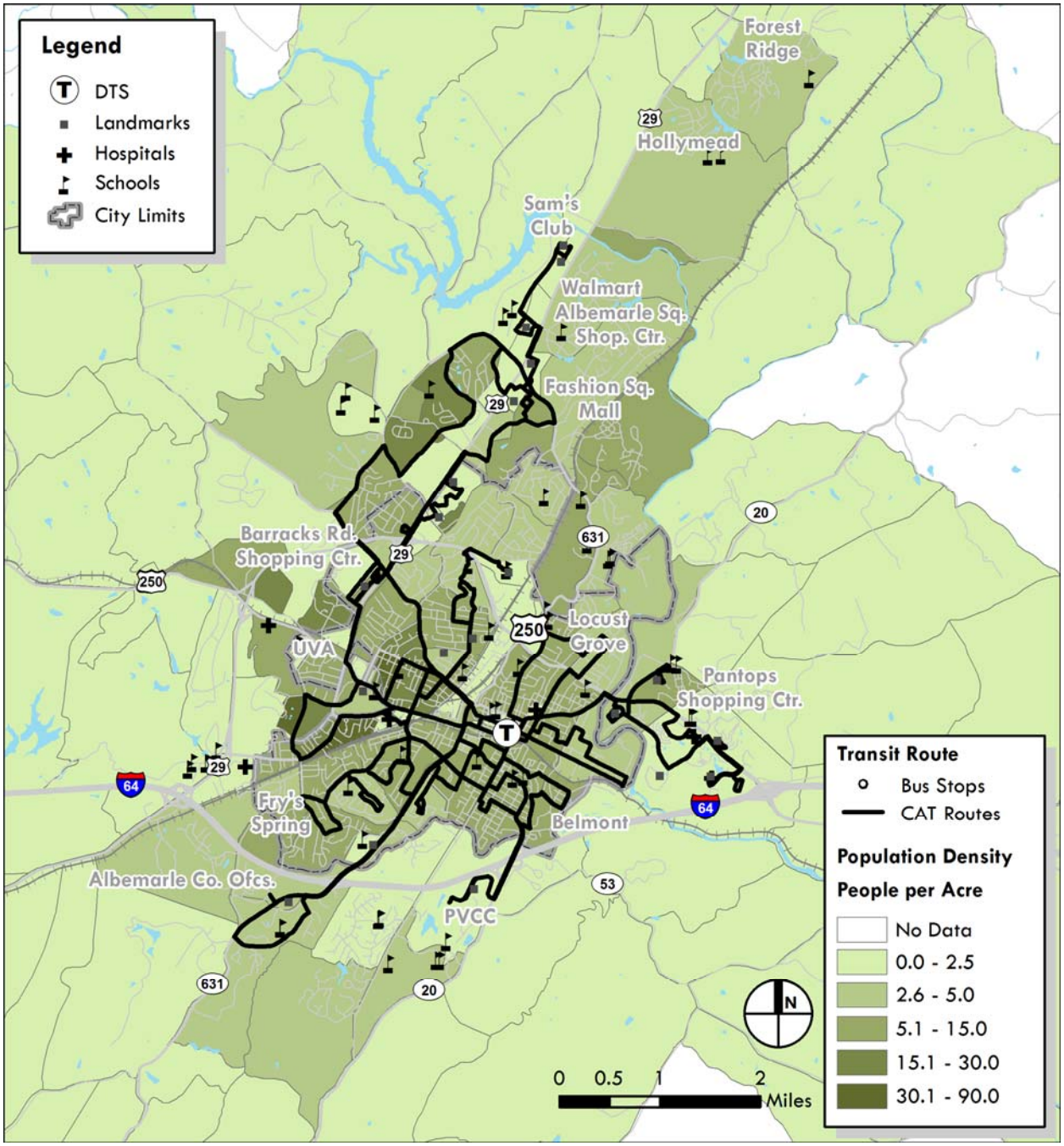
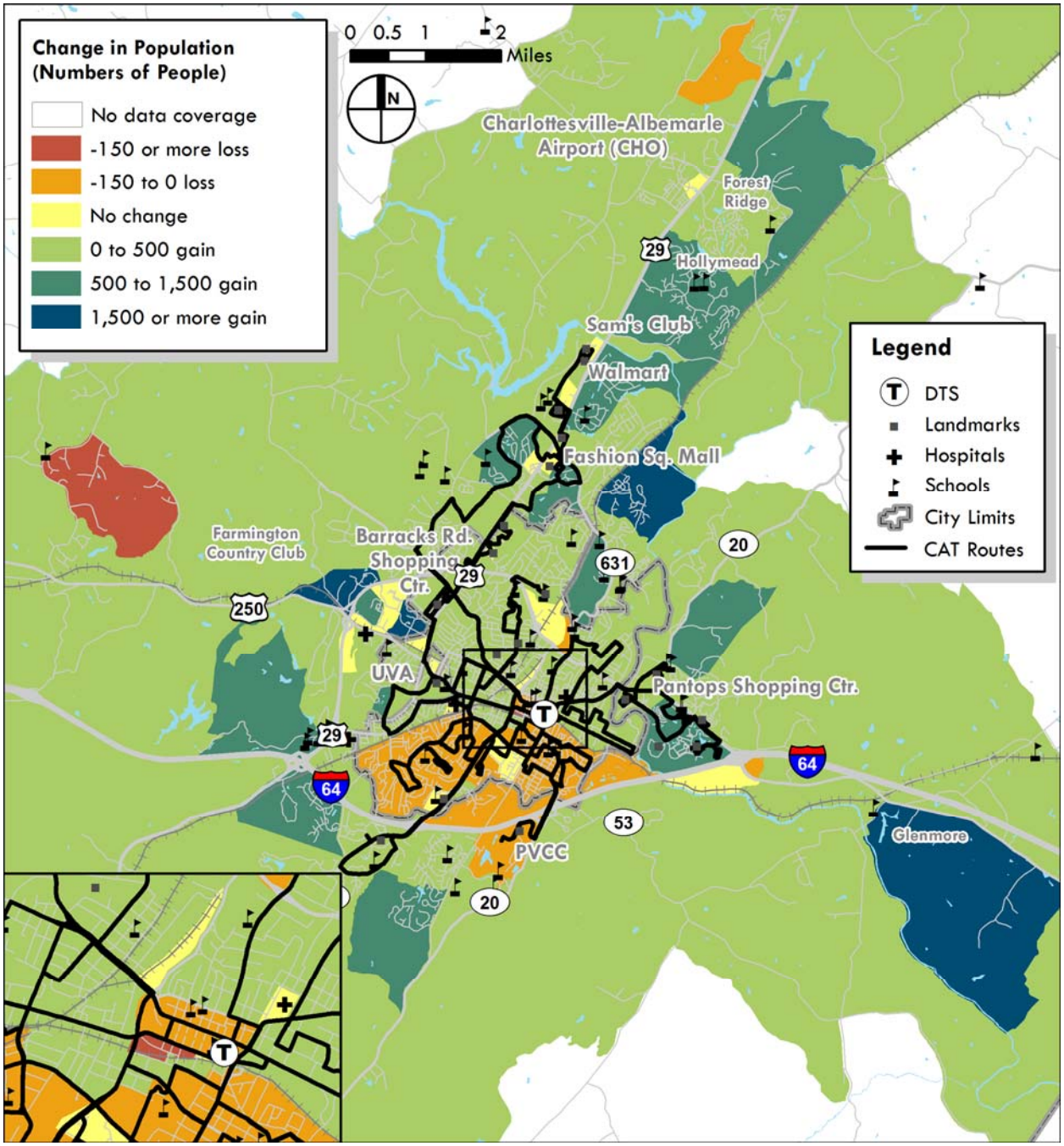


Figure 3-4: Total Population Change from 2007 to 2025 (with downtown inset)



3.2 Employment Growth Projections

Figure 3-5 identifies employment densities for 2007. Areas of highest employment density are within the central business district and around the University of Virginia. Other areas of higher density occur linearly along US 29 towards the Walmart and Sam's Club. The Pantops area, the area southwest of Charlottesville and the university have higher than average employment density.

Figure 3-6 shows the projected employment density for 2025. As previously noted, the 2025 total employment for the travel demand model's study area is 89,338 which is 33.7% higher than 2007 levels. The same areas of currently high employment density remain. Growth occurs west and southwest of the university along with around the Barracks Road Shopping Center. The central part of downtown also picks up more density.

Figure 3-7 shows anticipated employment change at the TAZ level. Zones with highest gains are at the university (1,600 employees) Pantops area (2,200 employees), an area along US 29 around the current Northrop Grumman Sperry Marine plant (1,600 employees), and two TAZs near the airport along US 29 (2,300 employee gain each). The TJPDC data identifies one negligible loss west of the Farmington Country Club. Many areas along important corridors such as US 29, the interstate, VA 631 and US 250 are expected to see general gains less than 500 employees. One item of note is the gain in the zone of the current Martha Jefferson Hospital. Current plans are for this facility to close and transfer staff to the Pantops Campus. Specific plans for the Locust Avenue hospital campus are unknown at this time.

Figure 3-5: 2007 Employment Density

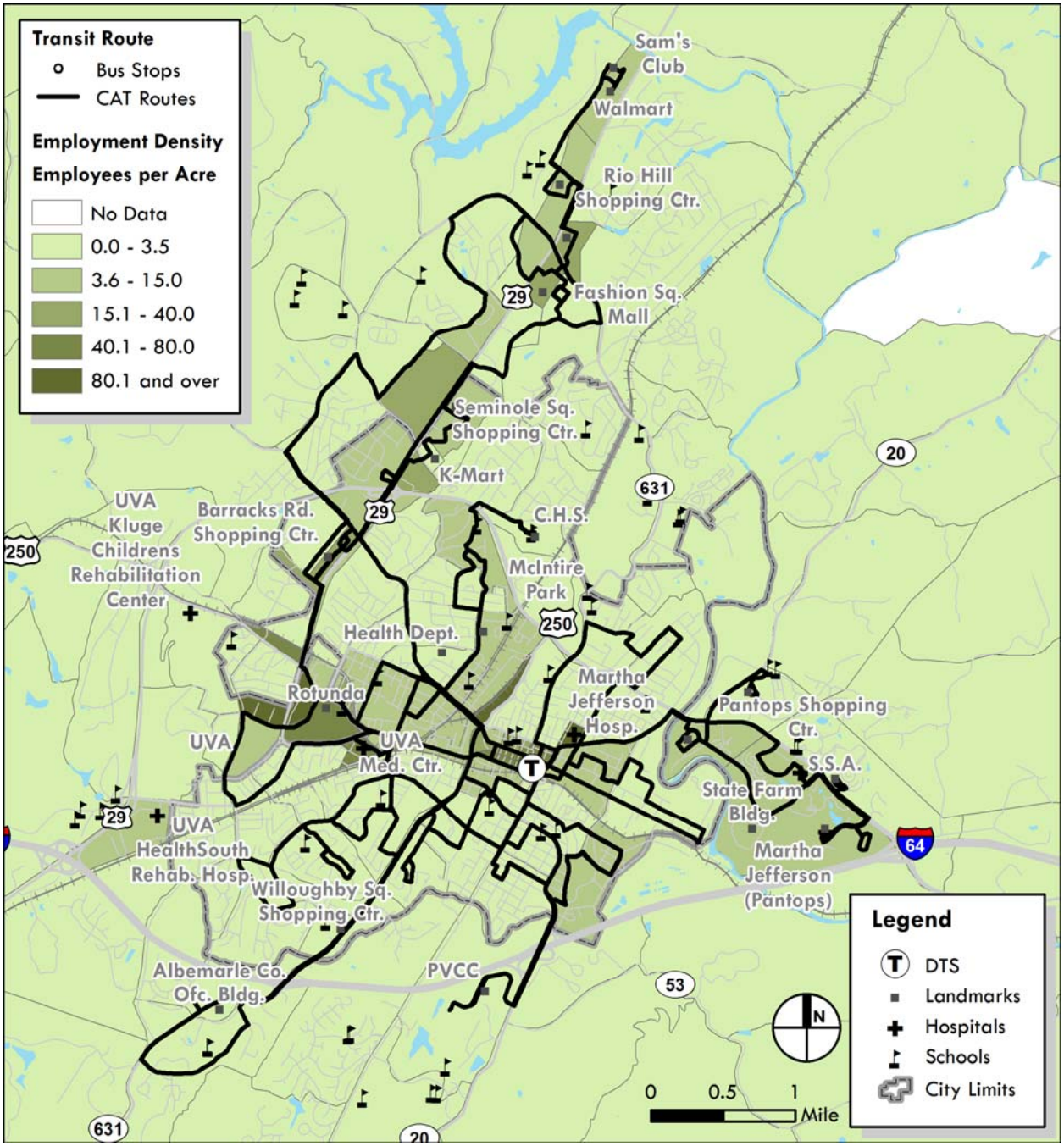


Figure 3-6: 2025 Employment Density

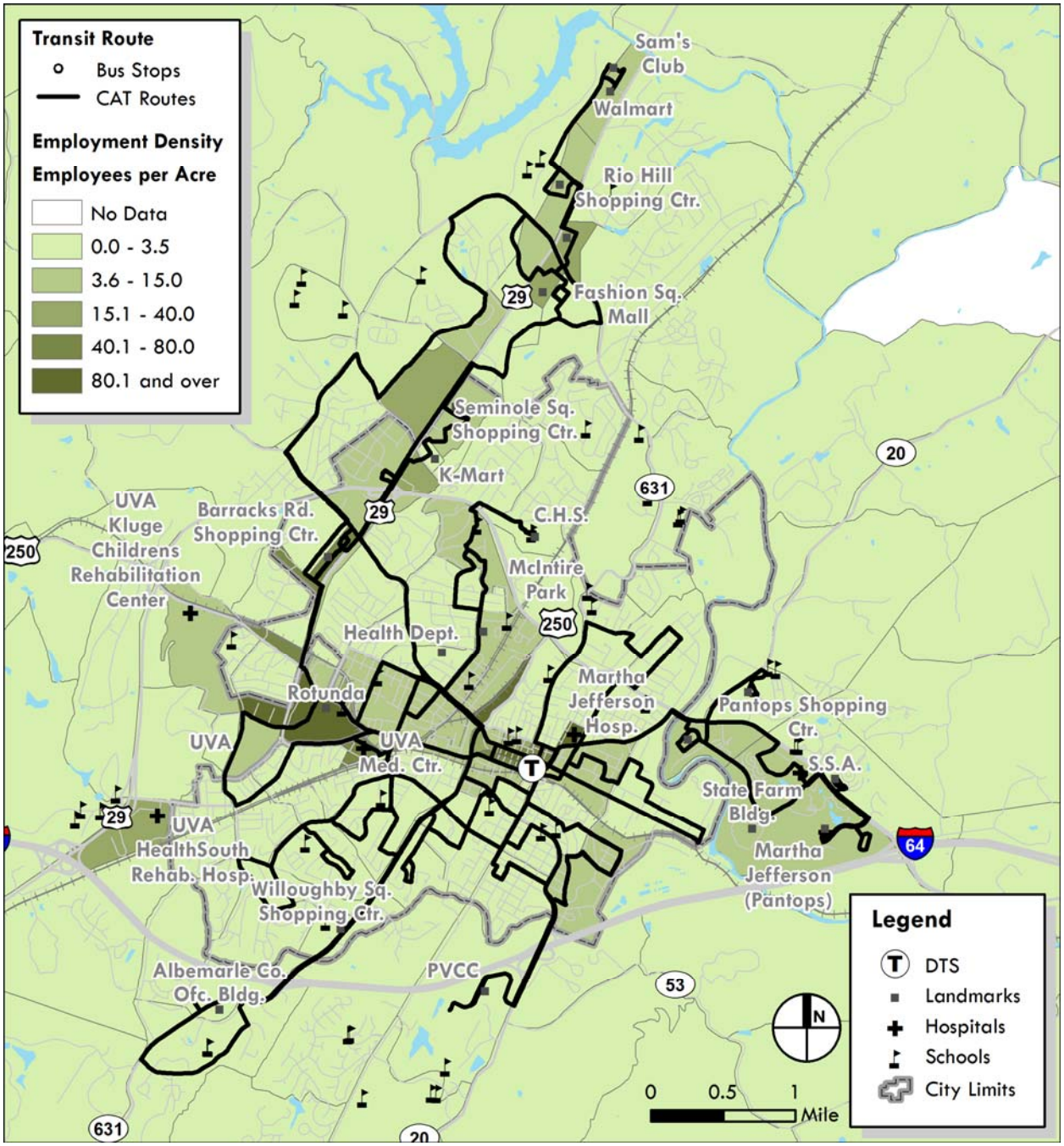
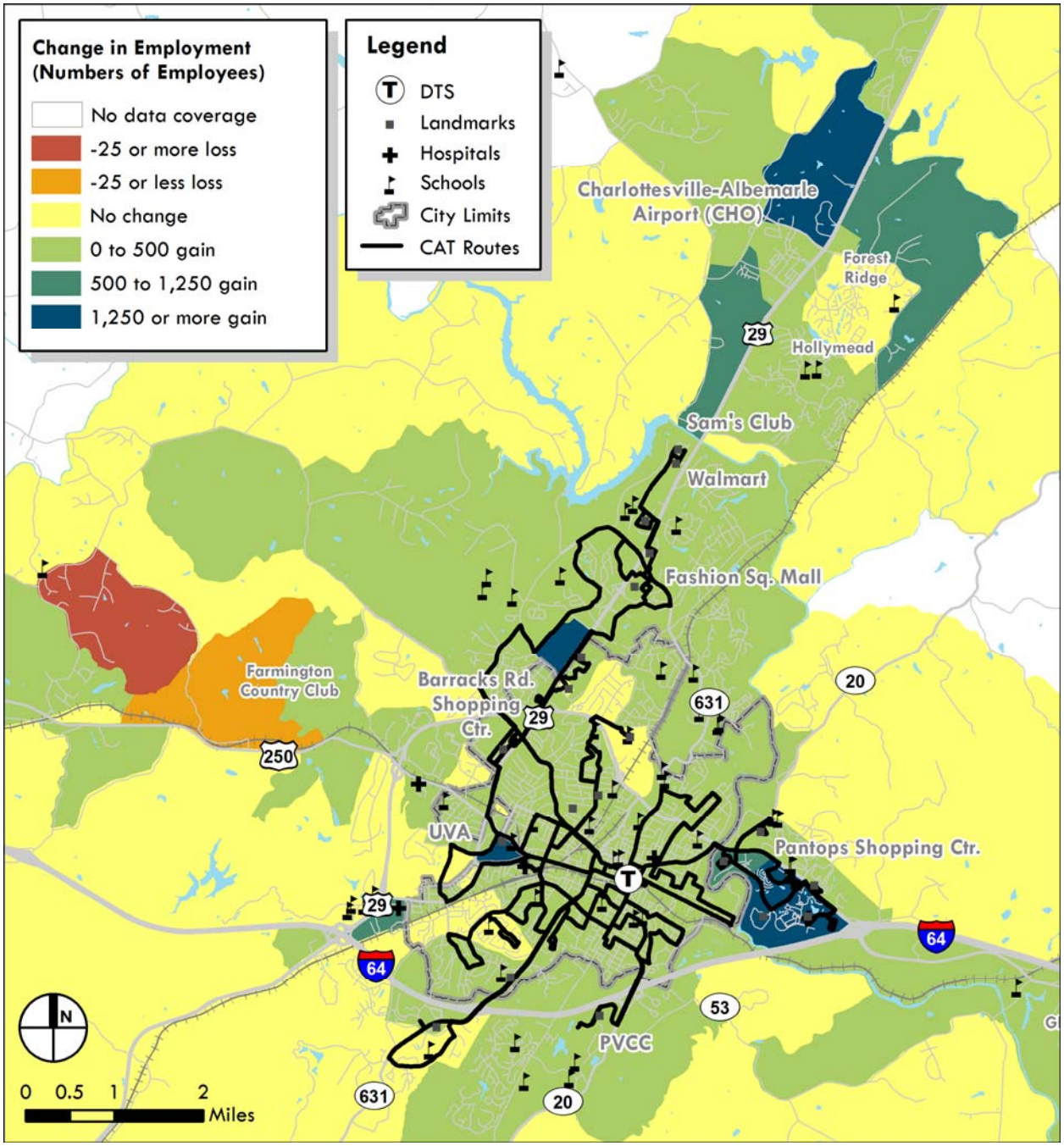


Figure 3-7: Total Employment Change from 2007 to 2025



4 Travel Patterns

Person trip tables for the year 2007 were obtained from the TJPDC regional travel demand model. These tables identify trip exchanges between TAZs for various trip purposes, including home-based work travel (HBW), home-based other (non-work) travel (HBO), and non-home-based travel (NHB).

Figure 4-1 shows the total number of person trips occurring to or from each TAZ. TAZ's with a high number of trips are colored darkest. TAZ with total trips exceeding 6,000 are highlighted in orange. In general, most of the zones with the highest number of total person trips appear to be within the county and away from the center of Charlottesville. The largest of these zones bound the Hollymead neighborhood and the Pantops area.

It is important to note, however, that the number of person trips shown by TAZ in Figure 4-1 does not is heavily influenced by zone size. For example, the single zone that contains Hollymead is a large zone that covers the same geographic size of several zones in central Charlottesville. Therefore, trip production values by TAZ were converted to trips per acre. Figure 4-2 presents this information. TAZ's with the highest level of trips per acre are colored darkest. Those TAZ with densities above 50 trips per acre are highlighted in orange. This map shows that most of the areas with high trip densities occur along a corridor from US 29/Seminole Trail to Emmet Street to Market Street, and includes TAZ's containing Fashion Square Mall, the Northrop Grumman plant, Seminole Square Shopping Center, many portions of UVA, the neighborhoods of 10th & Page, Rose Hill and Venable, and many blocks of the central business district area. TAZ's with the five highest person trip densities occur downtown within the CBD.

Figure 4-1: Total Trips by TAZ

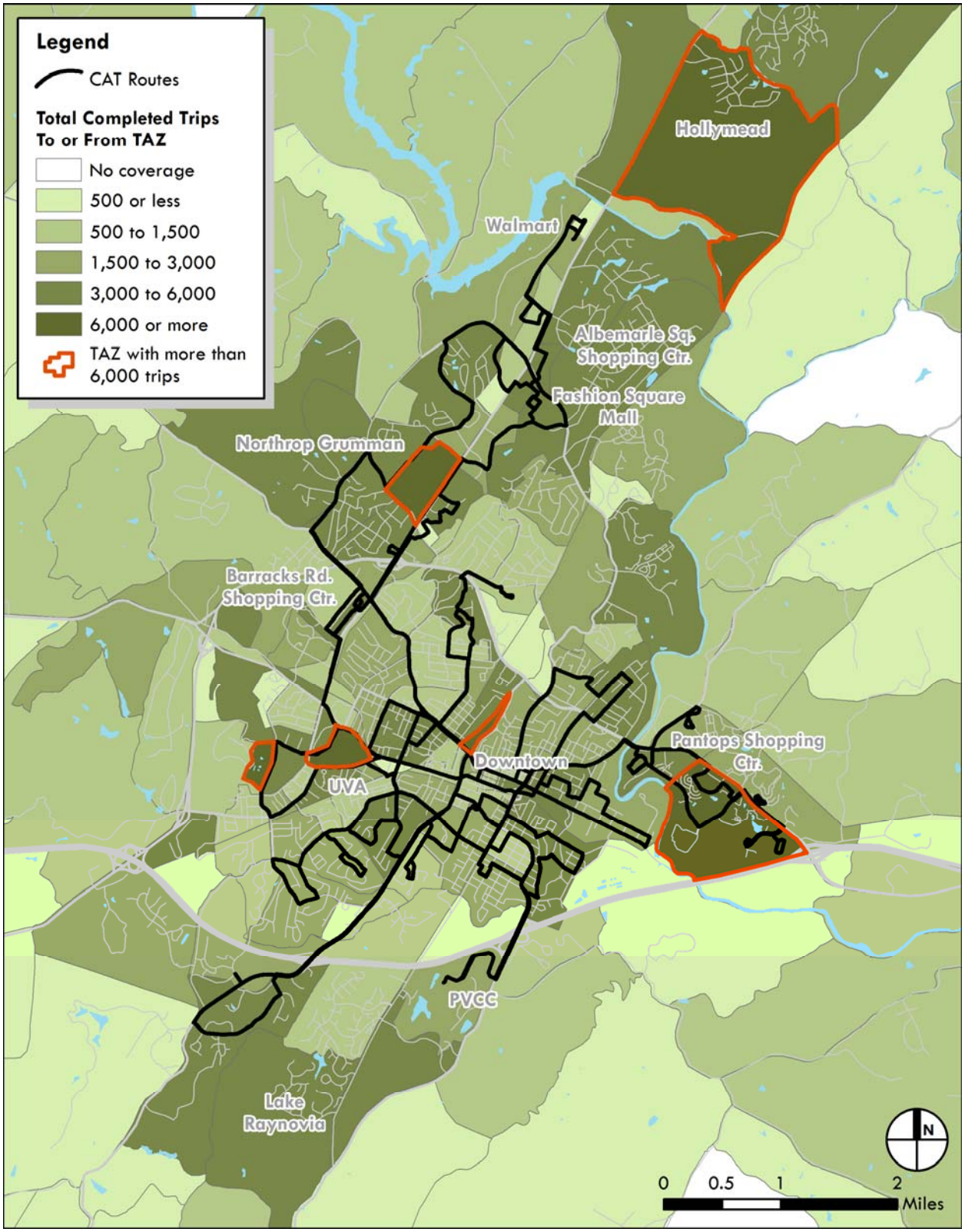
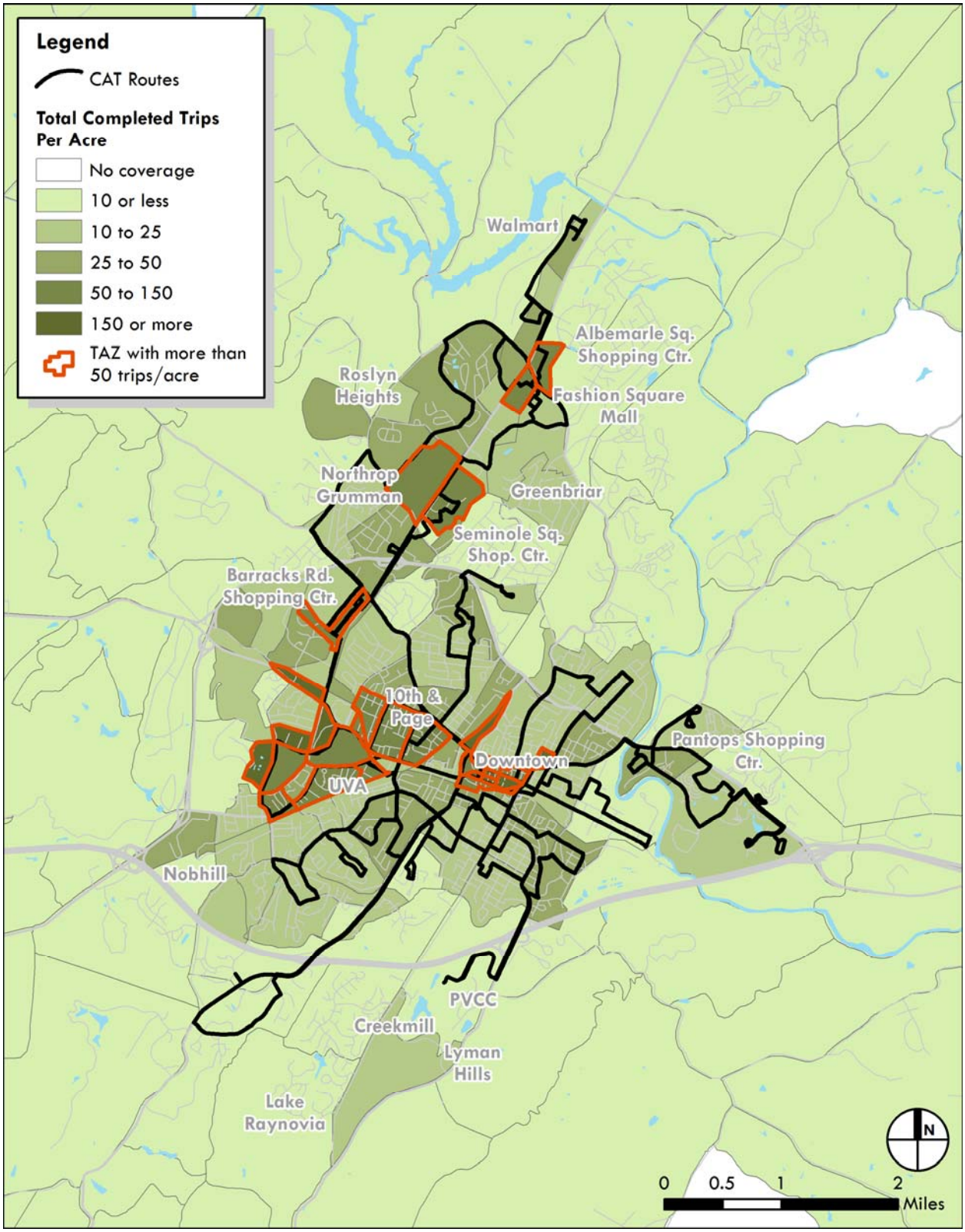


Figure 4-2: Trip Density (total trips per acre) by TAZ



To better understand travel patterns to/from some of the areas with high levels of person trip concentrations, data was collected from the 2008 U.S. Census' Longitudinal Employer-Household Dynamics (LEHD) Program. This U.S. Census program combines federal and state data on employers and employees with U.S. Census data to provide a number of local and state employment data sets. For the purposes of this report, local data was collected that identifies home to work travel patterns for workers of various employment centers in the region. This analysis was completed for the following five areas within Charlottesville:

- Charlottesville Central Business District
- University of Virginia area
- Barracks Road Shopping Center area
- US 29/Emmet St Corridor from Barracks Road Shopping Center to K-Mart
- Fashion Square Mall area

Figures 4-3 through 4-7 depict home locations for persons working in these areas.

As the map legends indicate, the shaded areas depict the different concentration of workers for each stated employment center. The existing CAT bus routes are overlaid to provide a reference to what areas within each labor shed are covered by existing bus service. Key points observed from the data are discussed following each map.

Charlottesville CBD Employee Travel Shed: The commute shed for the Charlottesville CBD appears to be concentrated for the most part within the city limits with pockets of commuters north of UVA and along US 29. Many of these areas are well served by transit. However, large disassociated segments of the shed include VA 20, along VA 631 north of the CBD, and south along Avon Street. These areas are not served by transit.

University of Virginia Employee Travel Shed: The commute shed for UVA is clustered in a number of areas. The largest family of clusters is concentrated to the southeast of the university as well as downtown and in neighborhoods such as Venable and Fifeville. Smaller clusters with higher concentration of commuters are to the south in the Mill Creek, Foxcroft, and Lake Reynovia neighborhoods, as well as north of the university in neighborhoods along Commonwealth Dr. Lower concentrations of commuters come from all areas north of downtown as well as in areas extending west of the university along US 250.

Barracks Road Shopping Center Employee Travel Shed: The commute shed for the Barracks Road Shopping Center area covers a large part of Charlottesville and has concentrations of commuters along Commonwealth Drive, north of Fashion Square Mall, around the university, and both north and south of downtown. Many of these areas are well served by transit but some pockets are at the margins of service.

US 29 Corridor (Barracks Road Shopping Center to K-Mart) Employee Travel Shed: The majority of commuters are clustered around transit service in the central area of Charlottesville and along US 29 towards Fashion Square Mall and Wal-mart where the largest concentrations of commuters are from. There are also slightly denser pockets of commuters from downtown and near the university.

Fashion Square Mall Employee Travel Shed: The commute shed for Fashion Square Mall is very similar to that of the US 29 corridor though the scale of commuters is roughly half. The same densest areas of commuters are from the apartments around the mall, downtown and around the university though workers are traveling from all over the area. The commute shed is well served by transit except for areas extending west along US 250 and west along Fontaine Avenue.

Figure 4-3: Labor Shed to Charlottesville Central Business District

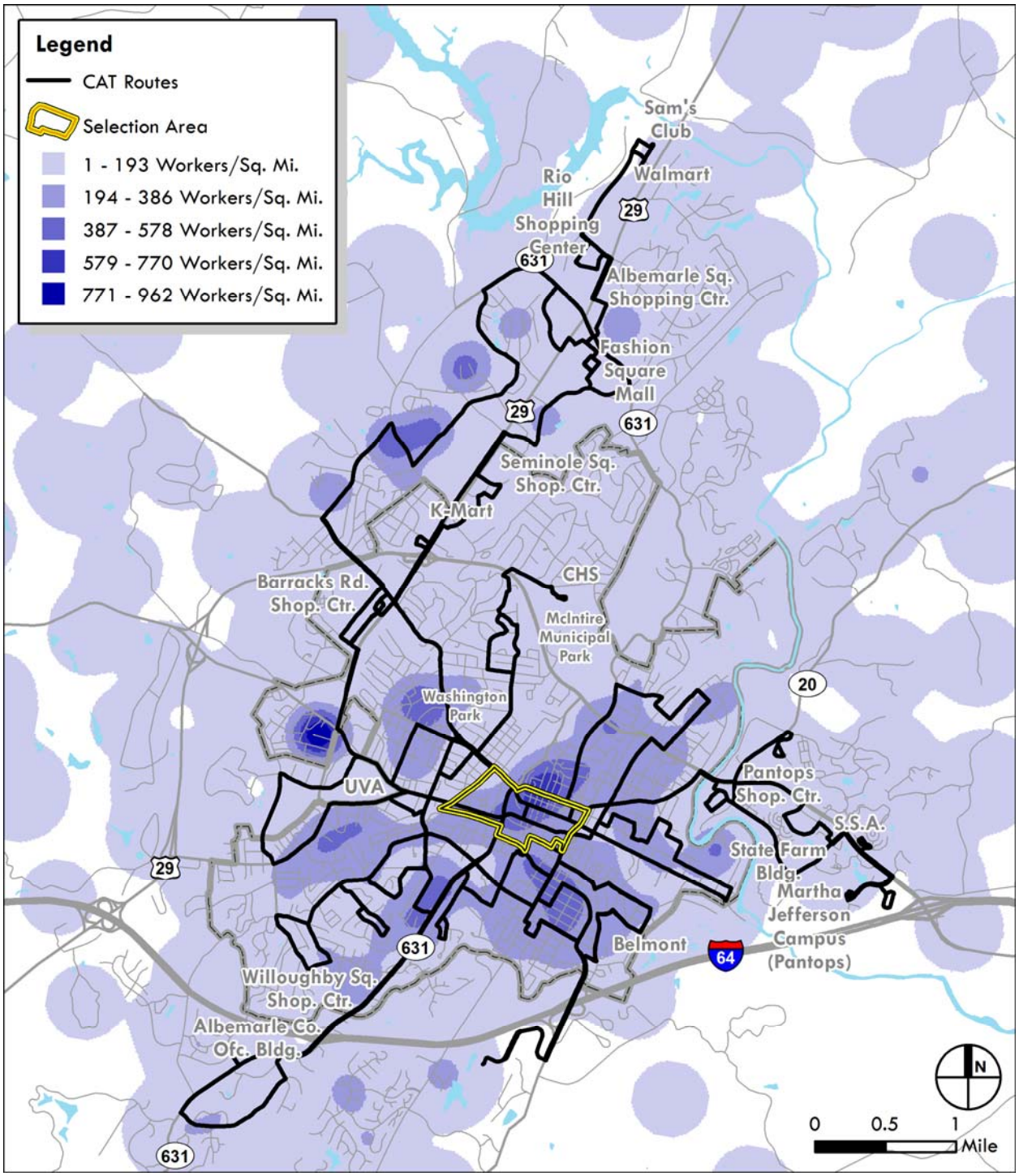


Figure 4-4: Labor Shed to University of Virginia

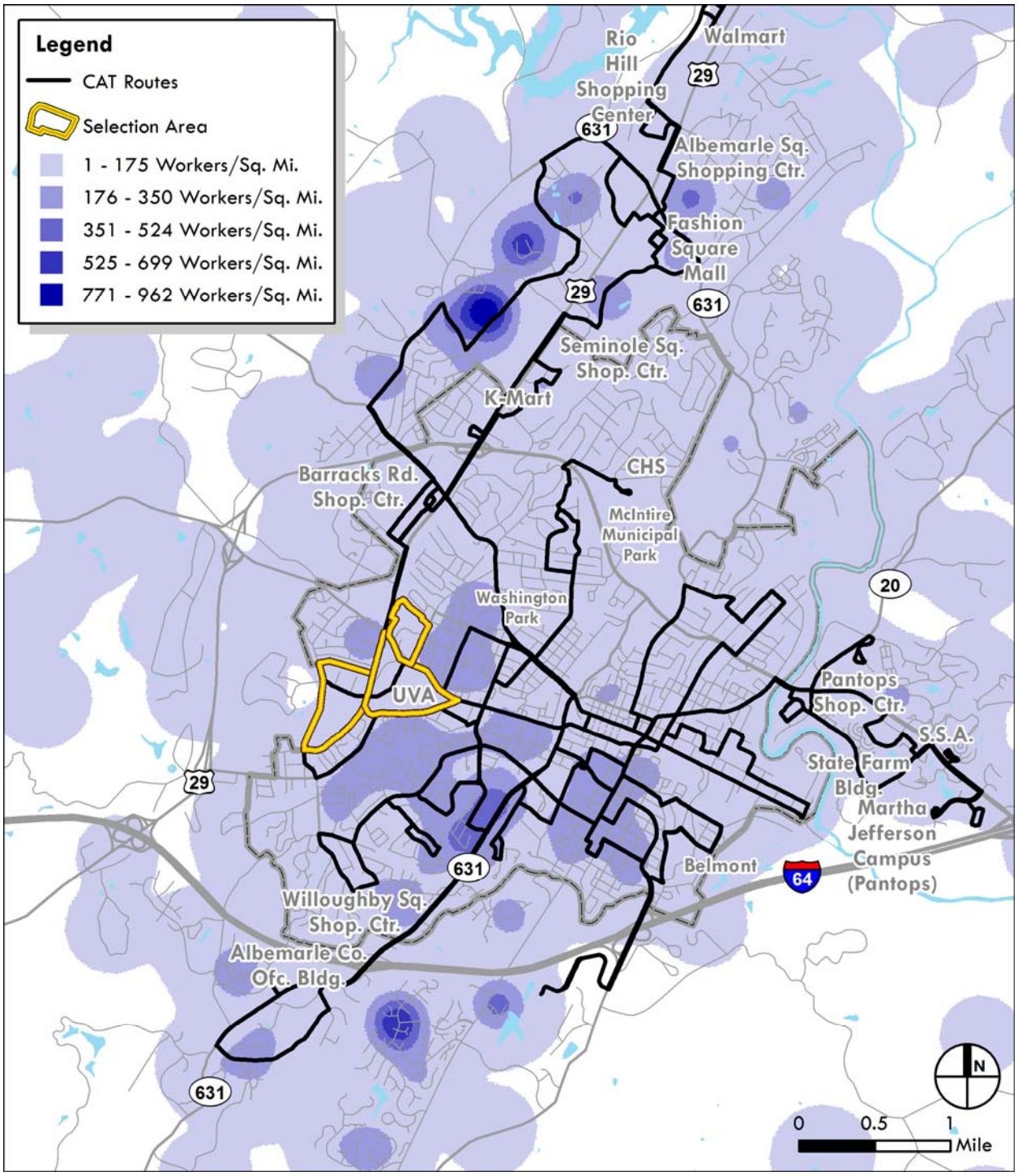


Figure 4-5: Labor Shed to Barracks Road Shopping Center

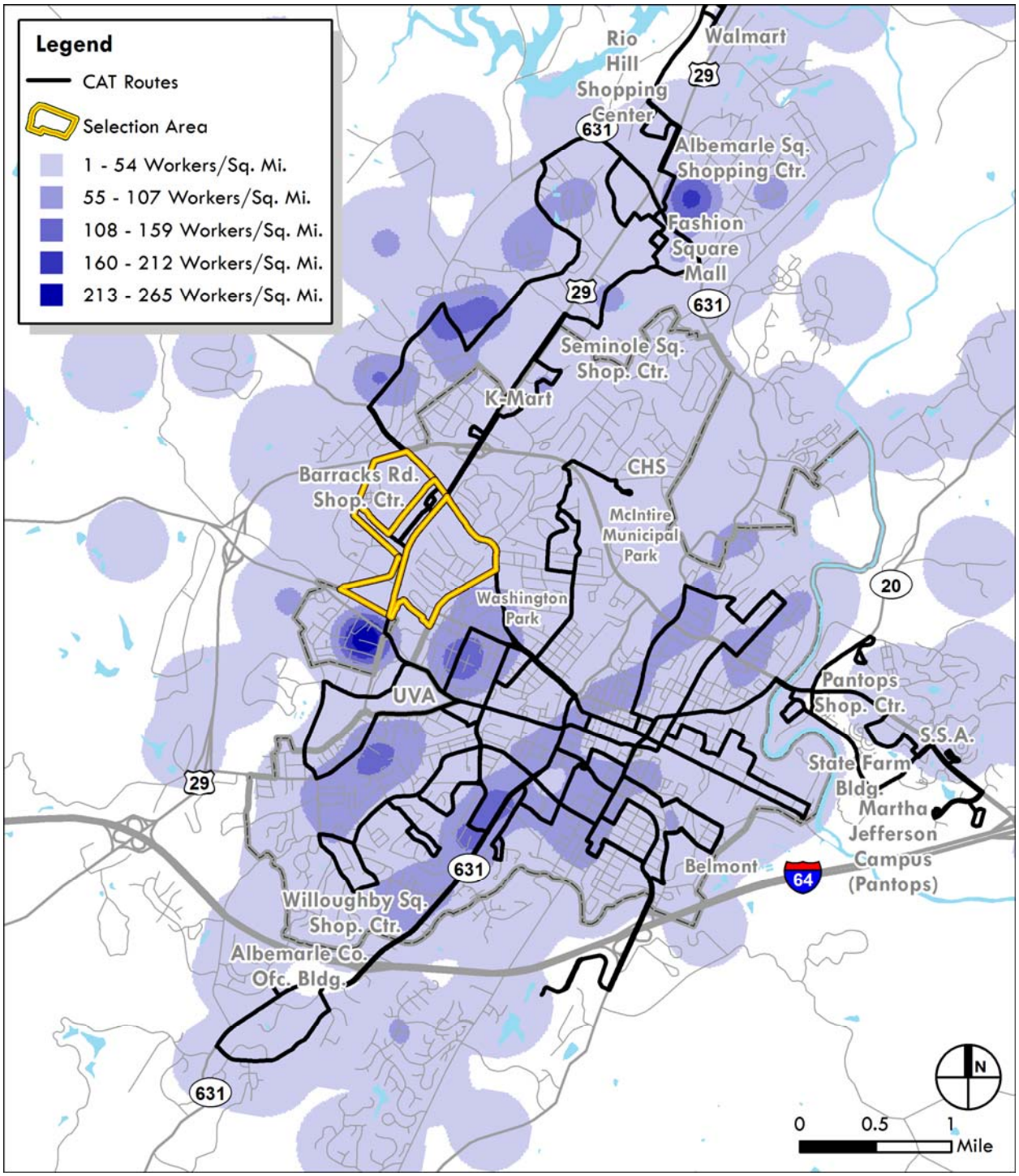


Figure 4-6: Labor Shed along US 29 corridor from Barracks Road Shopping Center to K-Mart

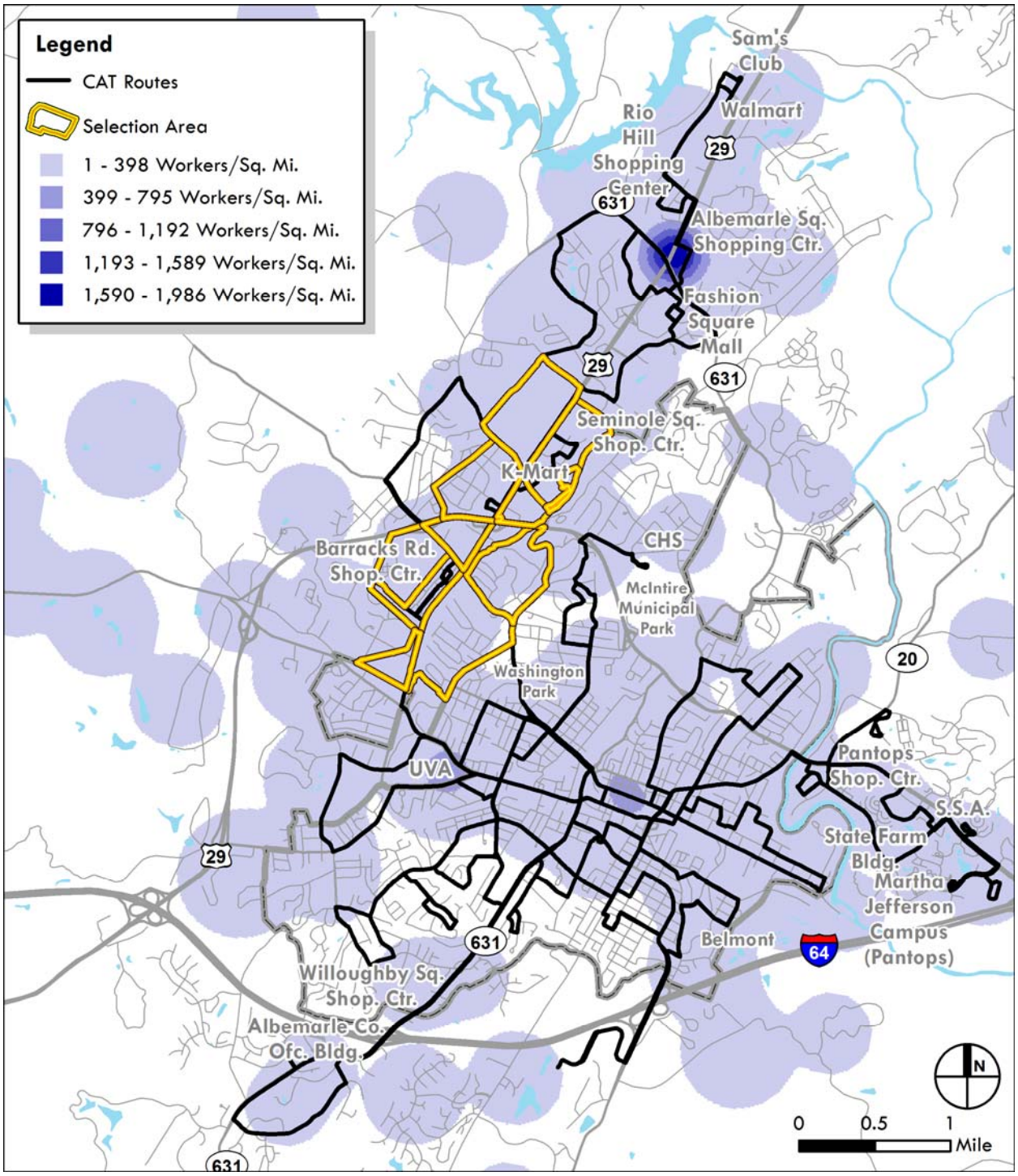
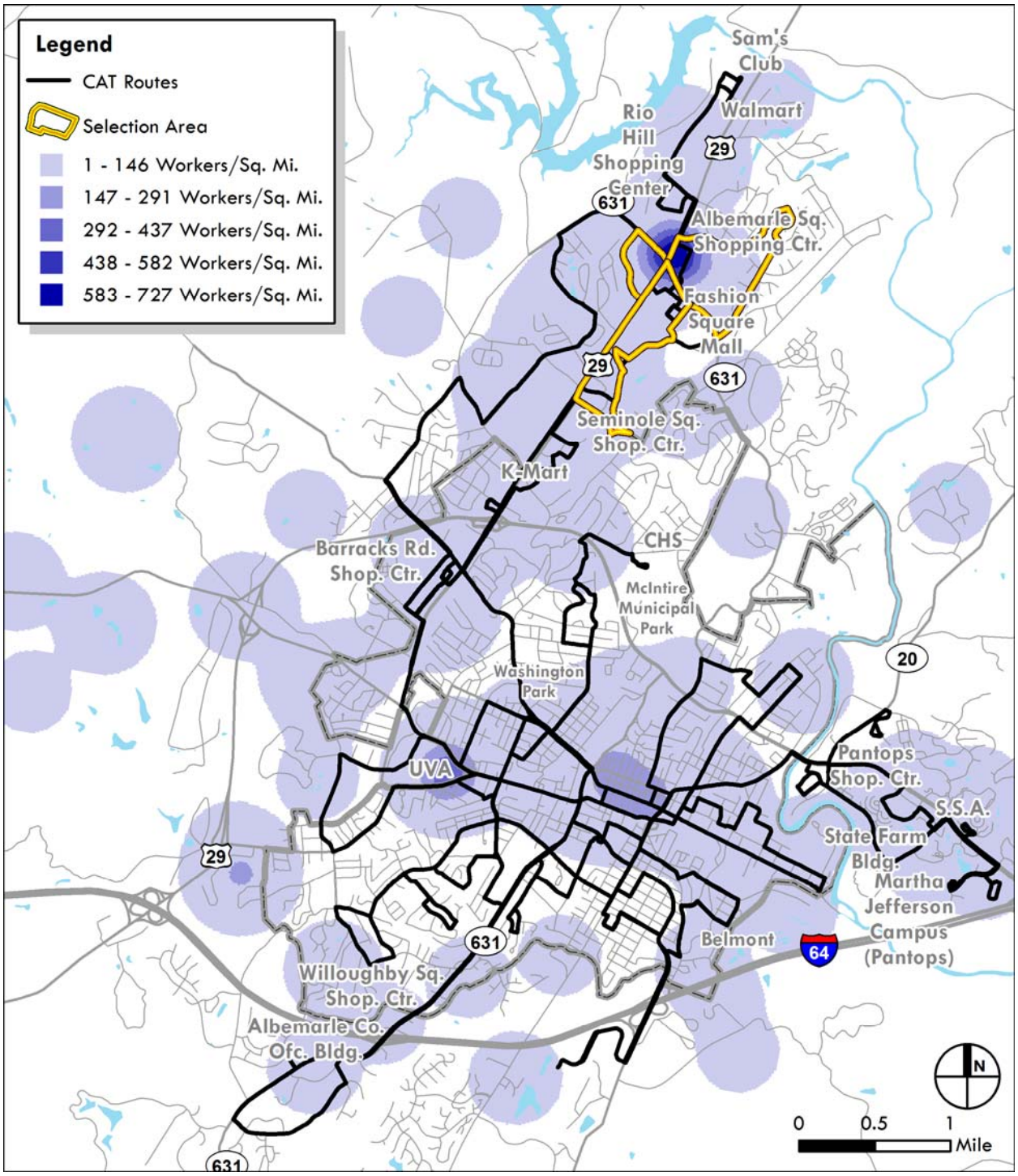


Figure 4-7: Labor Shed to Fashion Square Mall



5 Regional Transit Authority Plan Analysis

A detailed study was completed in 2008 regarding the potential formation of a Regional Transit Authority (RTA) Plan for the Charlottesville-Albemarle area. As part of that study, an analysis was completed that identifies transit supportive corridors and areas (Appendix C in a series of reports/technical memorandums). This analysis was based on a composite index that scores each TAZ's transit potential on the basis of the following eight characteristics:

- Residential density
- Employment density
- Congestion
- Parking availability
- Roadway connectivity
- Persons with lower incomes
- Transit-oriented plans and development policies
- Residential concentration of university employees

A transit potential score was identified for each TAZ for each of the above characteristics, and then averaged to obtain a composite score. Potential scores were: high, moderate/high, moderate, low/moderate and low. Areas that scored "high" were identified as areas that should warrant very frequent service (better than 15-minute frequencies). Areas that scored "low" were identified as areas that warrant no more than peak period commuter service.

Most of the City of Charlottesville scored as "moderate" or "moderate/high" in transit potential, with pockets of "high" transit potential in downtown and the UVA campus. Outside of the City, areas with "moderate" transit potential included Fashion Square Mall, locations along the US 29 North corridor, the Pantops area and south along Avon Street Extended.

Corridors deemed to be supportive of transit in the RTA work were:

- West Main/Market Street
- Route 29 North
- High Street/Route 250 East
- Ridge Street/Old Lynchburg Road
- Avon Street/Route 20
- Route 250 West (commuter services)

6 Potential New Transit Markets

Potential new transit markets have been identified based on a comparison of existing transit service coverage to the demographic data and growth analysis presented in this Technical Memorandum. Findings from other information sources has also been taken into consideration, such as the US Census' LEHD information, and the transit supportive corridors and areas analysis completed as part of the recent RTA work.

General conclusions regarding potential new transit markets that can be drawn from the work presented in the preceding pages are as follows:

City of Charlottesville Service

Neighborhoods within the City of Charlottesville appear to be well-covered with the existing transit network. A large majority of City residents are likely within ¼ mile of a CAT bus route. Potential service needs within the City are more likely related to service frequency improvements, more direct routing to destinations and/or span of service improvements.

Employers within the City of Charlottesville also benefit from the City's existing transit network coverage. However, as shown in this Technical Memorandum, employee travel sheds for major employment centers (such as UVA, downtown Charlottesville and the Barracks Road shopping center) tend to extend will beyond existing CAT transit service coverage. Thus, expanded regional transit service should be considered to address this market (as noted in the following section).

Albemarle County Service

Demographic analyses presented in this Technical Memorandum has shown that significant growth has occurred in Albemarle County over the past several years, and this trend is anticipated to continue. This growth includes population and employment. Much of the population growth in Albemarle County is anticipated to still have work destinations within the City of Charlottesville (such as UVA and downtown Charlottesville). Existing transit service in Albemarle County is generally limited to the US 29 North Corridor, the US 250 East Corridor and the 5th Street Extended Corridor. As development continues in Albemarle County, demand for new regional transit services (perhaps with supporting park-and-ride lots) to major employment destinations within Charlottesville is likely to increase, and thus should be considered in this project's service planning efforts. There is also the need for expanded local transit services in the higher density areas of Albemarle County (described in the sections below).

US 29 North Corridor

The US 29 Corridor begins in the western portion of the city and extends north into the county near the airport and the Forest Ridge and Hollymead neighborhoods already has a high number of residents and attractions. Employment is anticipated to follow population growth in this corridor. Population is expected to increase in neighborhoods between US 29 and the railroad. The Hollymead Town Center Shopping Center is expected to see a large increase in the number

of employees working there. The "Places 29" (May 2008) includes several land use, highway and transit recommendations for this corridor. Transit recommendations include a bus rapid transit (BRT) service to address regional travel needs, with supporting local circulators to address more localized travel needs. Presently, the US 29 Corridor north of Fashion Square Mall is served by one CAT route – Route 5, which operates only to the Wal-Mart at 30-minute frequencies, Monday through Saturday.

US 250 East Corridor

The US 250 East Corridor has also seen rapid population and employment growth. Employment centers include shopping centers (e.g., Pantops Shopping Center), several large office complexes, institutional offices (e.g., Veterans Administration, Social Security Administration) and the State Farm operations center. This fall, Martha Jefferson Hospital will be moving from their current downtown Charlottesville facility to a new hospital complex off of State Farm Blvd. (south of US 250). The opening of this facility is anticipated to further increase development activity in this corridor. Expanded service is needed – both geographic coverage and span of service coverage (i.e., evening and weekend service). The US 250 East Corridor is presently served by one CAT day route – Route 10, which operates at 60-minute frequencies, Monday through Saturday. It is also served on a more geographic-limited basis in the evenings by Route 24, which operates at 60-minute frequencies, Monday through Saturday. The evening Route 24 service only serves Pantops Shopping Center and Wilton Farm.

Avon Street Extended/US 20 Corridor

The Avon Street Extended/US 20 area is the third area in Albemarle County that has been identified as an area with increasing population densities. This area includes new subdivisions, Monticello High School and a neighborhood shopping center. Piedmont Virginia Community College (PVCC) is also located in this corridor. Service is currently provided to PVCC six days a week, including evening service. But, there is no service along Avon Street Extended or to Monticello High School. This corridor warrants consideration of expanded local route service.

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #8: Service Plan Recommendations

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

April 2011

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APPENDIX B – Near-Term Service Plan Operating Statistics

APPENDIX C – Short-Range Service Plan Operating Statistics

APPENDIX D – Long-Range Service Plan Operating Statistics

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1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

This Technical Memorandum is the culmination of data collected over the past several months, measuring existing service performance, customer demand and projected growth in the region. The recommended service changes are presented over three distinct time horizons – near-term (1-3 years), short-range (4-6 years) and long-range (2035). Within each time horizon, impacts to individual route alignments and frequencies are described. A resource allocation worksheet for each service plan is also provided in appendices at the conclusion of this report. Appendix A relates to current CAT service, Appendix B relates to full implementation of near-term recommendations, Appendix C relates to full implementation of short-range recommendations and Appendix D relates to full implementation of long-range recommendations.

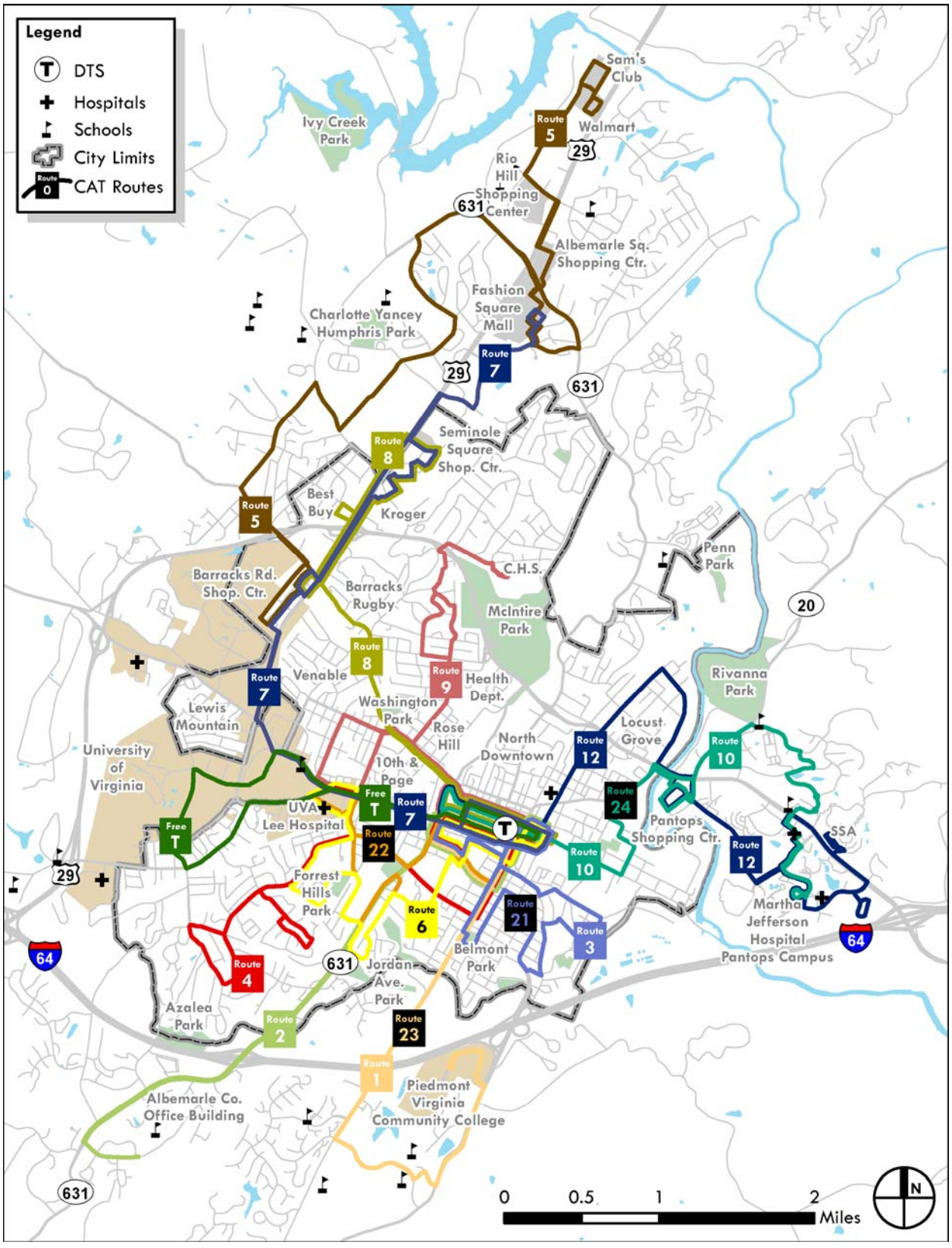
2 Near-Term Service Plan (1-3 Years)

The near-term plan that is presented in this Technical Memorandum reflects proposed service changes over the next three years, many of which can be implemented concurrent with the next scheduled service change in August. The near-term plan represents a cost-neutral approach in service hours; therefore recommendations are designed to maintain yet optimize the existing service structure with minimal route re-design. Improvements in on-time performance are prioritized while also addressing those services which are the least cost-effective. The pending relocation of Martha Jefferson Hospital is also a critical catalyst to this plan. With that in mind, any route re-structuring that occurs in the near-term plan remains cognizant of recommendations in the short-range plan to minimize customer impact. Highlights of the near-term service plan are:

- Decreased evening and Saturday morning frequency on the Free Trolley to better match customer demand;
- Renumbering of Route 1B to Route 1 and changing the approach to PVCC via Avon Street, Mill Creek Drive and VA 20;
- Renumbering of Route 2B to Route 2 and route modifications to provide bi-directional service along the Albemarle County segments of the service;
- Modifications to Route 3 to assume productive stop segments along Monticello Avenue currently served by Route 1B;
- Streamlining of Route 4 to provide bi-directional corridor service along Cherry Avenue;
- Modifications to Route 5 to provide bi-directional travel along Rio Road;
- Modifications to Route 6 to assume the Forrest Hills neighborhood currently served by Route 4, new service to Brookwood and bi-directional service throughout the core of the route;
- Adjustments to Route 7's morning running times to improve on-time performance plus adjustments to inbound routing to mimic the Free Trolley;
- Modifications to Route 9's inbound routing to maintain bi-directional service along 10th Street;
- Creation of a revised Route 10 by combining streamlined segments of Route 1A with northernmost segments of Route 10;
- Creation of new Route 12 by combining streamlined segments of Route 2A with the southernmost segments of Route 10; and
- Similar routing modifications to Evening Routes 21, 23 and 24 to match those recommended to Route 3, 1 and 10, respectively.

A map depicting the near-term changes to daytime and evening services is shown in Figure 2-1 followed by more detailed descriptions of the near-term service plan by area.

Figure 2-1
Near-Term Service Plan Map (Systemwide)



Northeast Charlottesville and Pantops Area

The relocation of Martha Jefferson Hospital requires service modifications in Northeast Charlottesville and the Pantops area. The current location of Martha Jefferson Hospital is served by three bus routes: Routes 1A, 2A, and 10. In addition, in an effort to increase ridership, because Route 1A (East Market) and Route 2A (Locust Avenue) have less ridership than any other daytime bus routes it is recommended that Routes 1A and 2A be adjusted together with Route 10 to provide connections between at least three destinations: Downtown, Pantops Shopping Center, and the new site of Martha Jefferson Hospital. The three routes will become two routes; Route 10 and Route 12. The new Route 10 will take the place of Route 1A and portions of the current Route 10. Route 12 will take the place of Route 2A and portions of the current Route 10. Figure 2-2 depicts the recommended route alignment changes for Northeast Charlottesville and the Pantops area in the near-term plan.

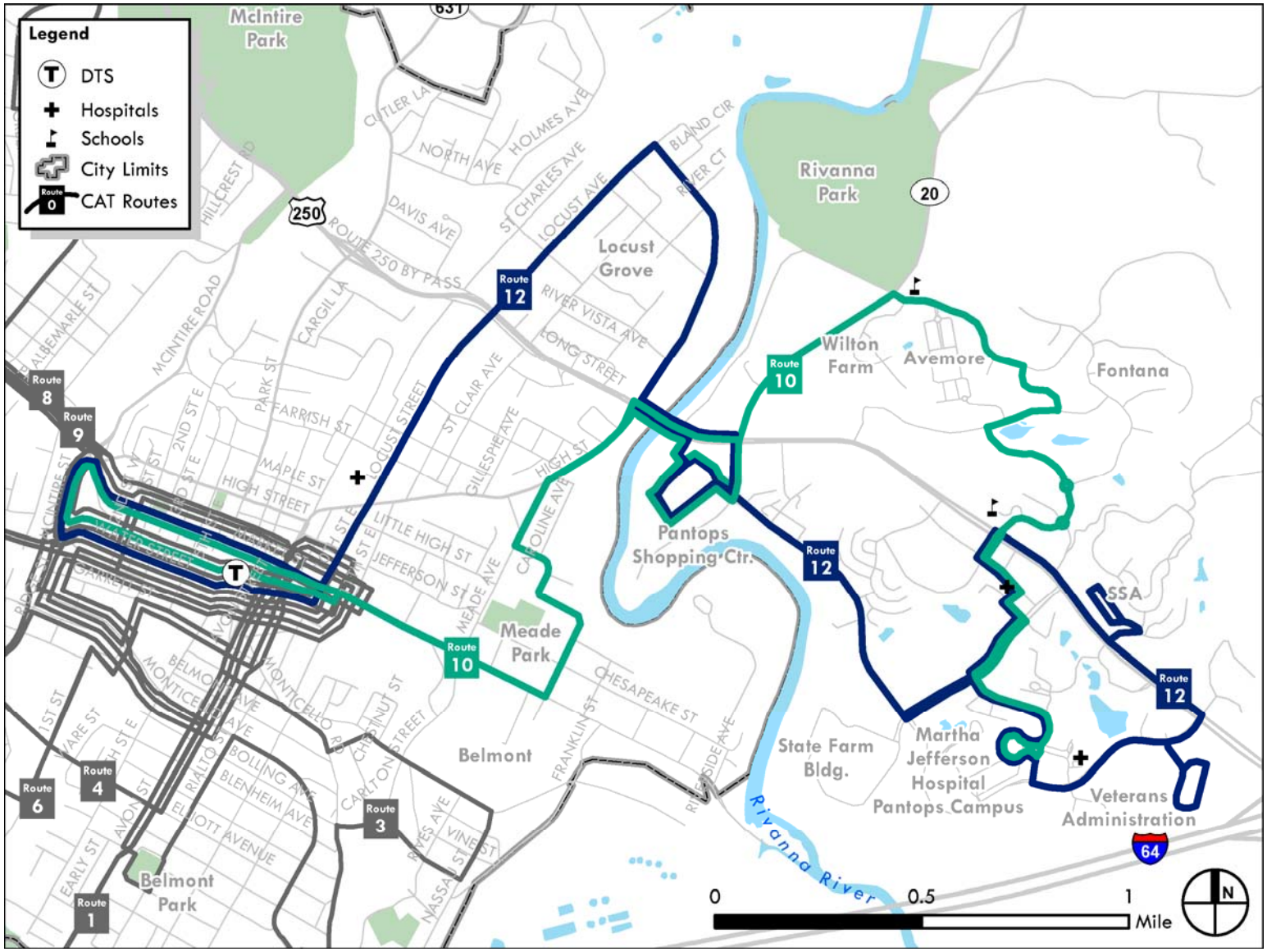
Route 10 – From the Downtown Transit Station, Route 10 circles the downtown mall via Water Street, Ridge-McIntire Road and Market Street. The route continues east on Market Street and then makes its way to Pantops Shopping Center via Fairway Avenue, Meade Avenue, High Street, US 250 and South Pantops Drive. After serving the shopping center, Route 10 crosses US 250 and continues north on Stony Point Road and east on Fontana Drive, serving Wilton Farm Apartments streetside. From Fontana Drive, Route 10 winds through the Pavilions at Pantops neighborhood by way of Appian Way, Olympia Drive and Rolkin Road. After crossing US 250, the route completes its trip to Martha Jefferson Hospital via Hickman Road and State Farm Boulevard, serving the Rivanna Ridge Shopping Center and Department of Motor Vehicles along the way. Routing back to the Downtown Transit Station is operated utilizing the same alignment. Service on Route 10 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:30 a.m. and 6:45 p.m. The first trip of the morning will start from Pantops Shopping Center and travel inbound to depart DTS at 6:45 a.m. Complementary evening service via Route 24 would also be provided from 6:45 p.m. until 11:45 p.m. As an option, routing on Fairway Avenue could be forfeited to a more direct path of travel on Meade Avenue while maintaining the same 60-minute route-trip cycle time.

Route 12 – From the Downtown Transit Station, Route 12 circles the downtown mall via Water Street, Ridge-McIntire Road and Market Street. At 10th Street the route continues north to Locust Avenue and then makes its way to Pantops Shopping Center via River Road, US 250 and South Pantops Drive. After serving the shopping center, Route 12 travels west on South Pantops Drive to Martha Jefferson Hospital. Upon leaving the hospital, the route continues through the campus to Peter Jefferson Parkway. A one-way, counterclockwise loop is operated via US 250, Rolkin Court, Hickman Road and State Farm Boulevard, making deviations for the Veterans Administration and Social Security Administration offices along the way. Routing back to the Downtown Transit Station is operated utilizing the same alignment starting at South

Pantops Drive. Service on Route 12 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:15 a.m. and 7:15 p.m.

Figure 2-2

Near-Term Service Plan Map (Northeast Charlottesville and Pantops Area)



South Charlottesville

Service modifications in South Charlottesville are designed to improve ridership opportunities by eliminating idle service time, minimize circuitousness by streamlining services and improve overall on-time performance. Also, Routes 1B and 2B are renumbered to Routes 1 and 2, respectively. Figure 2-3 depicts the recommended route alignment changes for South Charlottesville in the near-term plan.

Route 1 – From the Downtown Transit Station, Route 1 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 1 turns left again and then right on Avon Street. After passing the CAT operations base, the route continues south to Mill Creek. Here, Route 1 turns left on Mill Creek Drive and left again through Stone Creek Village Apartments before reaching VA 20. At VA 20, Route 1 turns left and then left again into PVCC, stopping at the passenger pick-up loop on campus. Routing back to the Downtown Transit Station is operated utilizing the same alignment until reaching Monticello Avenue. Here, the route will continue north on Avon Street to prepare for its approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 1 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:45 a.m. and 6:45 p.m. and will be interlined with Route 2 at the DTS. Complementary evening service via Route 23 would also be provided from 6:45 p.m. until 11:15 p.m.

Route 2 – From the Downtown Transit Station, Route 2 travels west on Water Street to Ridge-McIntire Road and turns left. From here, the route continues south until reaching Hickory Street and turns left. Route 2 then continues through Southwood Trailer Park, turning around in the office/recreation center parking area. Routing back to the Downtown Transit Station is operated utilizing the same alignment until reaching Monticello Avenue. Here, the route turns east on Monticello Avenue and then north on Avon Street to prepare for its approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 2 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:15 a.m. and 6:45 p.m. and will be interlined with Route 1 at the DTS.

Route 3 – From the Downtown Transit Station, Route 3 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 3 turns left again and then left on 2nd Street. After turning right on Garrett Street, the route continues toward Belmont by turning right on Avon Street and then left on Hinton Avenue. Here, the clockwise circulation through Belmont continues by way of Monticello Road, Bainbridge Street, Carlton Avenue and Nassau Street. At Hampton Street, Route 3 turns right and then left on Carlton Road, left on Monticello Road and Right on Druid Avenue. At VA 20 (Monticello Avenue), Route 3 turns north to Rialto Street. Here, Route 3 will dip south toward Belmont Park, circling back to Druid Avenue and Avon Street. The route then turns north on Avon Street to prepare for its approach to the DTS

via Market Street, 10th Street and Water Street. Service on Route 3 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:15 a.m. and 6:45 p.m. During weekday peak hours, service is recommended to operate at 30-minute frequency. To accommodate running times, Route 3 will be part of a three-way interline with Routes 4 and 6 at the DTS. Departing trips on Route 3 will be served by incoming trips on Route 4. After completing Route 3, returning trips will depart DTS as Route 6. Complementary evening service via Route 21 would also be provided from 7:15 p.m. until 11:45 p.m.

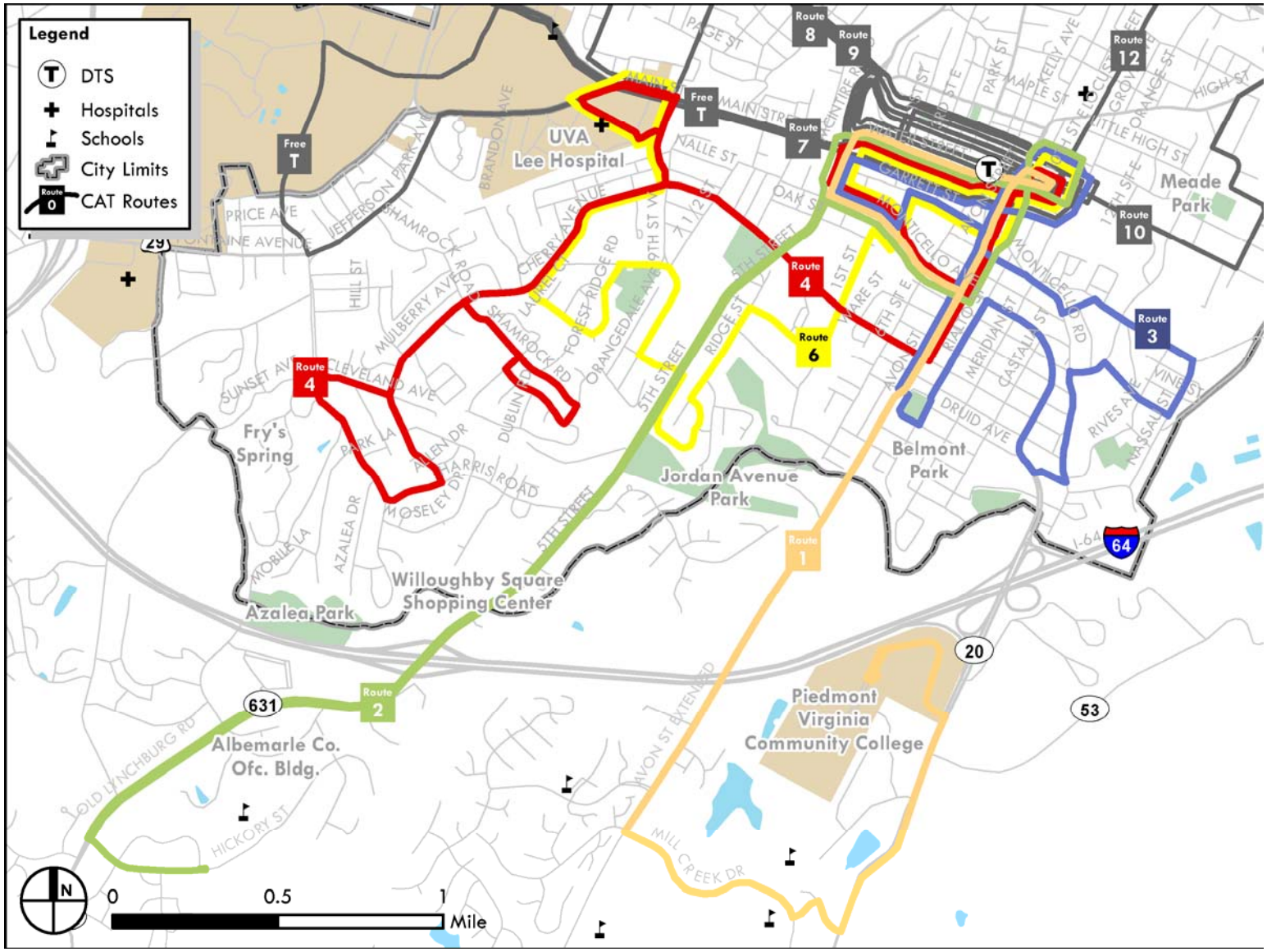
Route 4 – From the Downtown Transit Station, Route 4 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 4 turns left again and then right on Avon Street. At Elliott Avenue, the route turns west and continues onto Cherry Avenue toward UVA Hospital. At Roosevelt Brown Boulevard, Route 4 completes a one-way loop around the hospital via Crispell Drive, Lee Street, Jefferson Park Avenue, West Main Street and Roosevelt Brown Boulevard. At Cherry Avenue, Route 4 turns right and continues to Fry's Spring. A turn-around loop is made by traveling via Cleveland Avenue, Jefferson Park Avenue, Harris Road and Willard Drive/Cherry Avenue. The return trip also features a deviation into the Johnson Village neighborhood via Shamrock Road, Antoinette Avenue, Village Road and Trailridge Road. After completing this deviation, Route 4 continues back through the UVA Hospital loop and then back to the Downtown Transit Station, utilizing the same alignment until reaching Monticello Avenue. Here, the route will continue north on Avon Street to prepare for its approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 4 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:30 a.m. and 6:45 p.m. During weekday peak hours, service is recommended to operate at 30-minute frequency. To accommodate running time, Route 4 is will be part of a three-way interline with Routes 3 and 6 at the DTS. Departing trips on Route 4 will be served by incoming trips on Route 6. After completing Route 4, returning trips will depart DTS as Route 3.

Route 6 – From the Downtown Transit Station, Route 6 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 6 turns left again and then right on 2nd Street, passing through Crescent Halls to 1st Street. Continuing south on 1st Street, the route continues toward the Brookwood neighborhood via Lankford Avenue, Ridge Street and Brookwood Drive. At 5th Street, Route 6 turns right and then left onto Bailey Road to assume Forrest Hills segments currently served by Route 4. Route 6 then makes its way to UVA Hospital via Prospect Avenue, Forrest Hills Avenue, Forest Ridge Road, Rockcreek Road, Cherry Avenue and Roosevelt Brown Boulevard. UVA Hospital is served by a one-way loop around the hospital via Crispell Drive, Lee Street, Jefferson Park Avenue and West Main Street back to Roosevelt Brown Boulevard. Routing back to the Downtown Transit Station is operated utilizing the same alignment until reaching Monticello Avenue. Here, Route 6 will continue north on 2nd Street and then east on Garrett Street. The route then turns north on Avon Street to prepare for its

approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 6 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:45 a.m. and 7:00 p.m. During weekday peak hours, service is recommended to operate at 30-minute frequency. To accommodate running times, Route 6 will be part of a three-way interline with Routes 3 and 4 at the DTS. Departing trips on Route 6 will be served by incoming trips on Route 3. After completing Route 6, returning trips will depart DTS as Route 4. Complementary evening service on portions of Route 6's alignment is provided by Route 22 from 6:45 p.m. until 11:15 p.m.

Figure 2-3

Near-Term Service Plan Map (South Charlottesville)



UVA and Northwest Charlottesville

Service modifications in the UVA and Northwest Charlottesville area are designed to improve performance by eliminating underutilized trips and route segments and improve overall on-time performance. Figure 2-4 depicts the recommended route alignment changes for the UVA and Northwest Charlottesville area in the near-term plan.

Free Trolley – There are no alignment changes recommended for the Free Trolley. However, modifications to service frequency are suggested to better fit ridership demand. Data collected during the on-board ridecheck conducted in October 2010 suggest that evening trips as well as Saturday morning trips carry significantly fewer riders than other times of the day. Therefore, it is recommended to remove one Trolley vehicle and reduce frequency to 30-minutes after 8:00 p.m. Service frequency during all other time periods would remain the same.

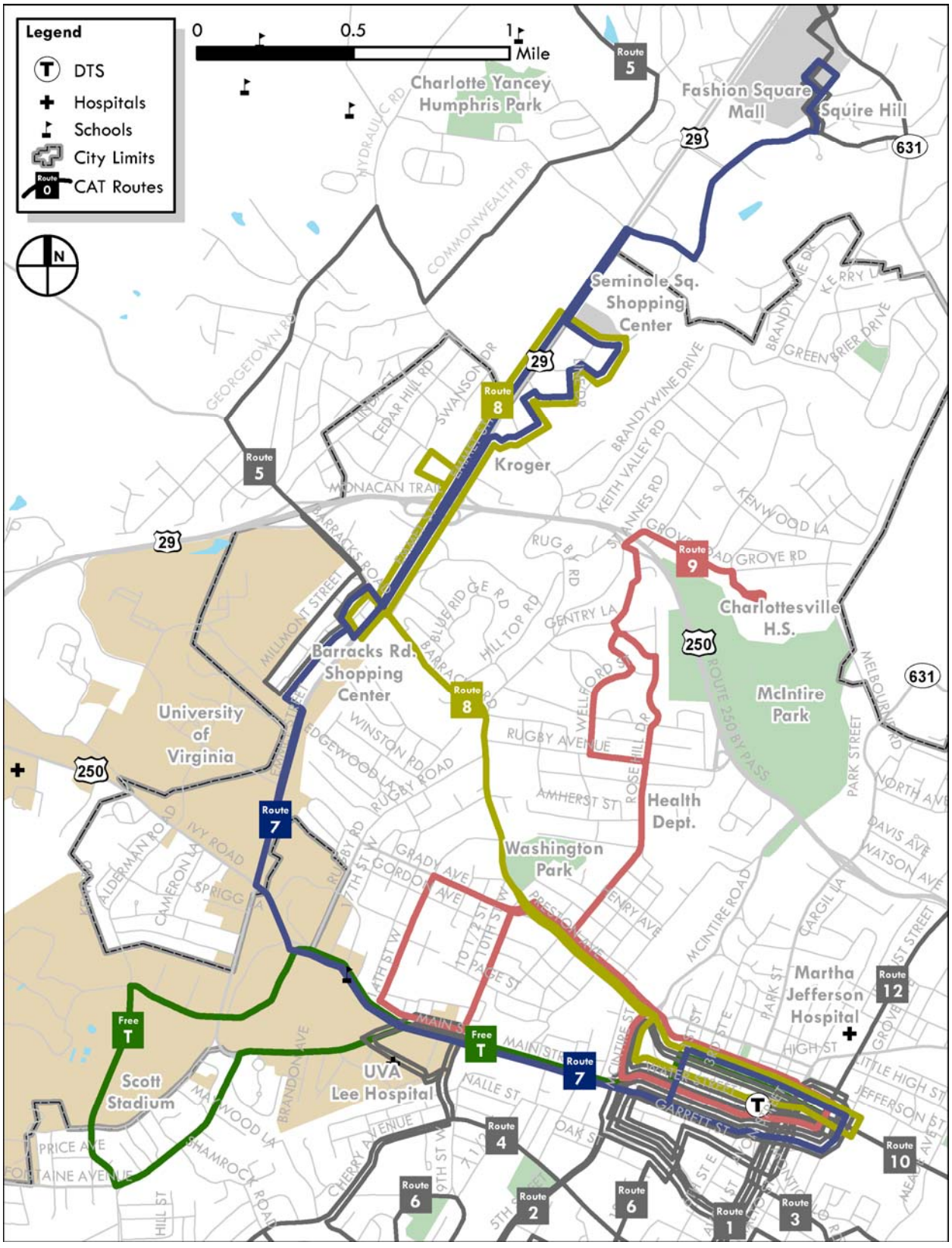
Route 7 – There are no major alignment changes recommended for Route 7. However, one minor adjustment is recommended in the inbound direction as Route 7 approaches downtown. Instead of turning left on Ridge-McIntire Road, Route 7 is recommended to turn left onto 2nd Street and resume its regular inbound path at Market Street. In addition to this alignment change, minor schedule adjustments are also recommended. On weekdays and Saturdays, an additional bus is added during the morning hours to improve on-time performance. Doing so provides 75 minutes for each round trip, rather than the current 60 minutes. On Sundays at the end of the service day, all Route 7 trips are recommended to complete an inbound trip prior to deadheading to the garage. This will allow additional opportunities for mall employees to access transit after working their shifts with minimal cost impact to CAT. There are no other adjustments to alignment or schedule recommended for Route 7 at this time.

Route 8 – There are no recommended changes to Route 8's alignment or schedule in the near-term service plan.

Route 9 – There are no major alignment changes recommended for Route 9. However, one minor adjustment is recommended in the inbound direction as Route 9 approaches downtown. Instead of turning right on Page Street and left on 9th Street, Route 9 is recommended to continue north on 10th Street, east on Grady Avenue and resume its regular inbound path at Preston Avenue. There are no other adjustments to alignment or schedule recommended for Route 9 at this time. However, consideration should be given to ensure arrival and departure times from Charlottesville High School are optimized to meet student activities without compromising consistent, clock-face pulses from the DTS.

Figure 2-4

Near-Term Service Plan Map (UVA and Northwest Charlottesville)



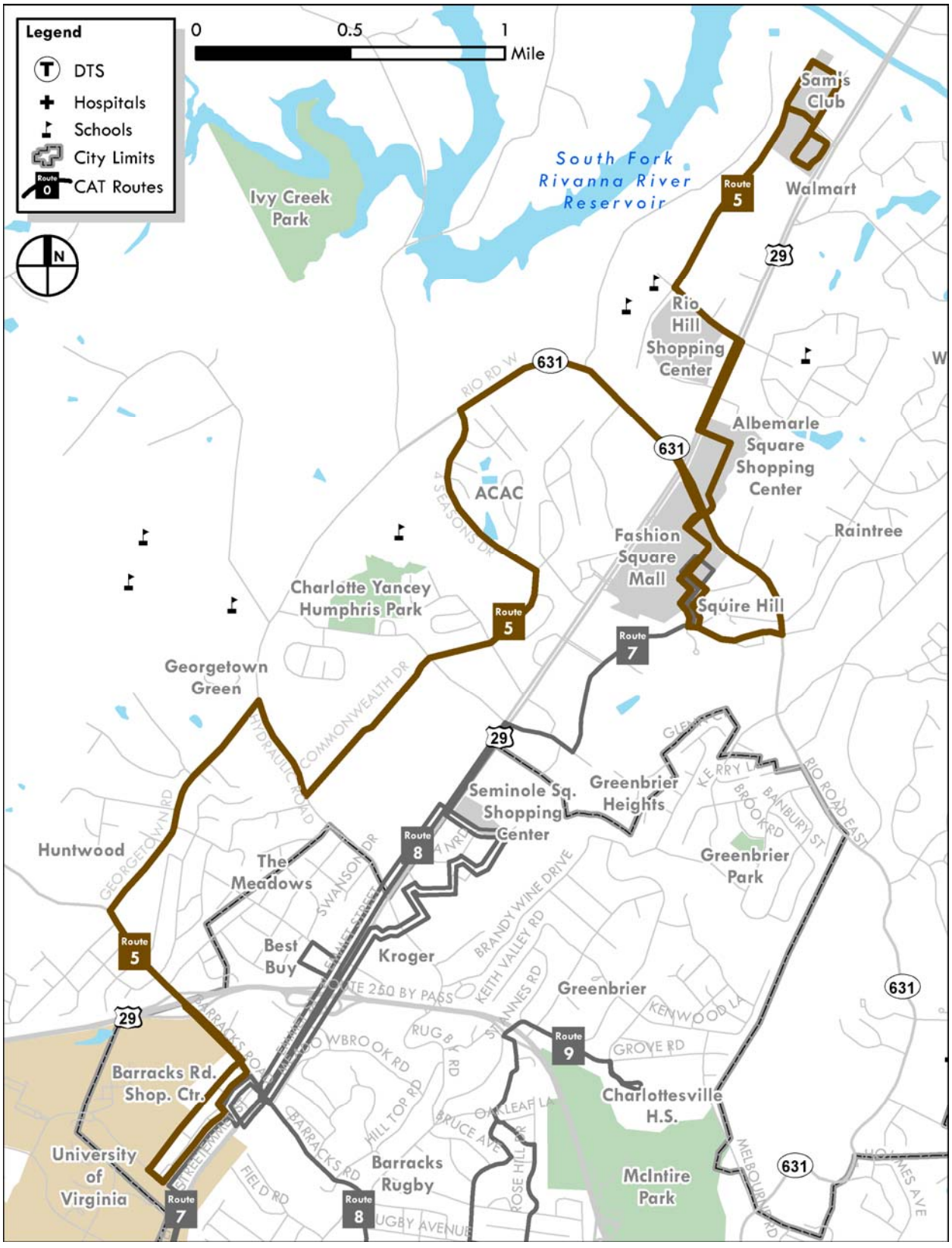
North Charlottesville and Albemarle County

Service modifications in North Charlottesville and Albemarle County are designed to improve performance by eliminating underutilized route segments and improve overall on-time performance. Figure 2-5 depicts the recommended route alignment changes for North Charlottesville and Albemarle County in the near-term plan.

Route 5 – There are no major alignment changes recommended for Route 5. However, one minor adjustment is recommended in the southbound direction after Route 5 leaves the Fashion Square Mall. Instead of traveling in one direction via Berkmar Drive, Route 5 is recommended to exit the mall via Rio Road and continue west until reaching the current alignment at Berkmar Drive. There are no other adjustments to alignment or schedule recommended for Route 5 at this time.

Figure 2-5

Near-Term Service Plan Map (North Charlottesville and Albemarle County)



Evening Service

Evening service modifications are designed to mimic their daytime counterparts as much as possible. This helps eliminate passenger confusion and provide for a smoother transition to consistent route nomenclature in future years. Figure 2-6 depicts the recommended evening route alignment changes in the near-term plan.

Route 21 – From the Downtown Transit Station, Route 21 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 21 turns left again and then left on 2nd Street. After turning right on Garrett Street, the route continues toward Belmont by turning right on Avon Street and then left on Hinton Avenue. Here, the clockwise circulation through Belmont continues by way of Monticello Road, Bainbridge Street, Carlton Avenue and Nassau Street. At Hampton Street, Route 21 turns right and then left on Carlton Road, left on Monticello Road and Right on Druid Avenue. AT VA 20 (Monticello Avenue), Route 21 turns north to Rialto Street. Here, Route 21 will dip south toward Belmont Park, circling back to Druid Avenue and Avon Street. The route then turns north on Avon Street to prepare for its approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 21 is recommended to operate at 60-minute frequency, Monday-Saturday between 7:15 p.m. and 11:45 p.m. and will be interlined with Route 22 at the DTS.

Route 22 – There are no recommended changes to Route 22's alignment or public schedule in the near-term service plan. Trips departing the DTS at :45 after the hour will be interlined with Route 21. Trips departing the DTS at :15 after the hour will be interlined with Route 23.

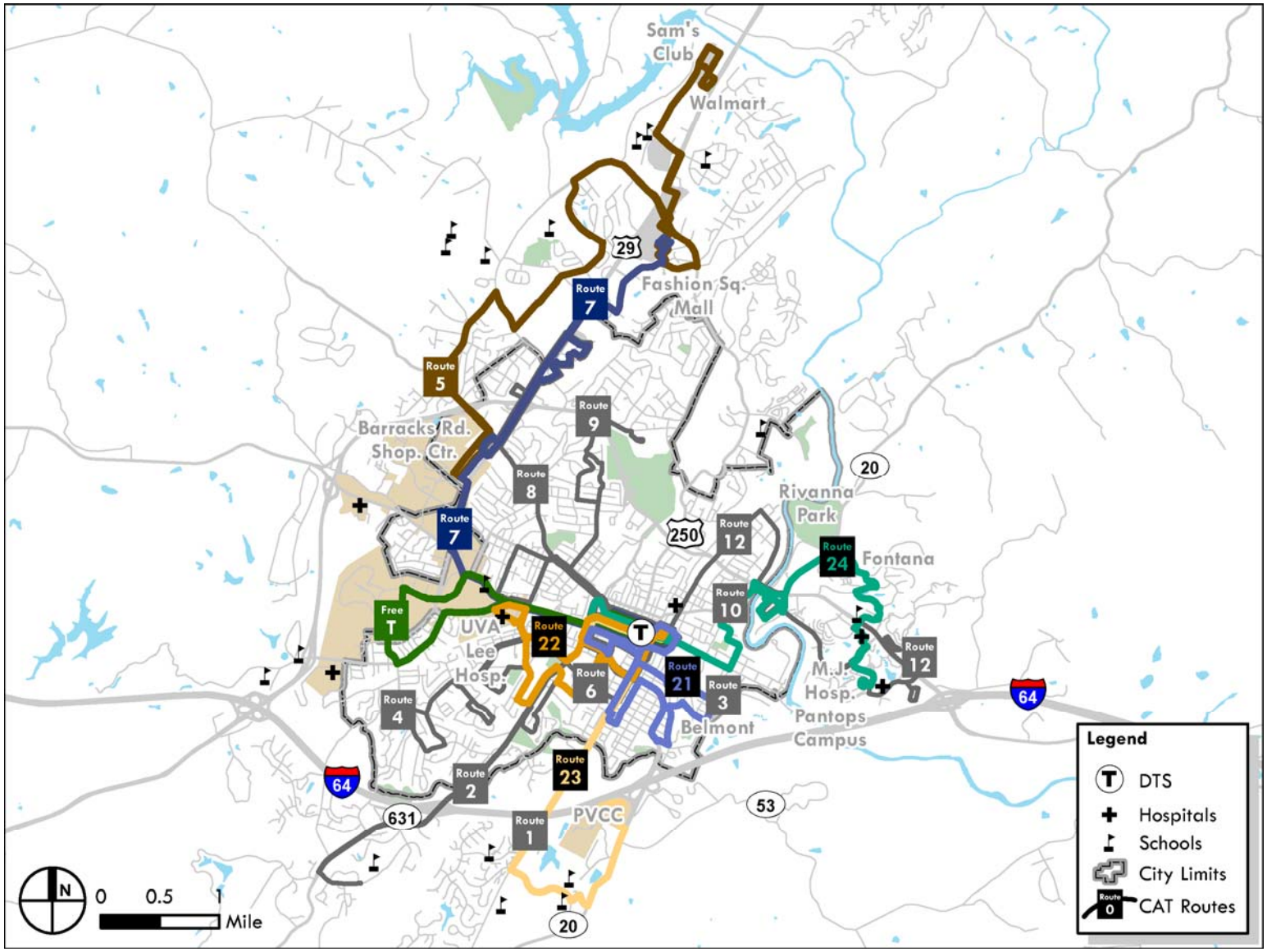
Route 23 – From the Downtown Transit Station, Route 23 travels west on Water Street to Ridge-McIntire Road and turns left. At Monticello Avenue, Route 23 turns left again and then right on Avon Street. After passing the CAT operations base, the route continues south to Mill Creek. Here, Route 23 turns left on Mill Creek Drive and left again through Stone Creek Village Apartments before reaching VA 20. At VA 20, Route 23 turns left and then left again into PVCC, stopping at the passenger pick-up loop on campus. Routing back to the Downtown Transit Station is operated utilizing the same alignment until reaching Monticello Avenue. Here, the route will continue north on Avon Street to prepare for its approach to the DTS via Market Street, 10th Street and Water Street. Service on Route 23 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:45 p.m. and 11:15 p.m. and will be interlined with Route 22 at the DTS.

Route 24 – From the Downtown Transit Station, Route 24 circles the downtown mall via Water Street, Ridge-McIntire Road and Market Street. The route continues east on Market Street and then makes its way to Pantops Shopping Center via Fairway Avenue, Meade Avenue, High Street, US 250 and South Pantops Drive. After serving the shopping center, Route 24 crosses US 250 and continues north on Stony Point Road and east on Fontana Drive, serving Wilton

Farm Apartments streetside. From Fontana Drive, Route 24 winds through the Pavilions at Pantops neighborhood by way of Appian Way, Olympia Drive and Rolkin Road. After crossing US 250, the route completes its trip to Martha Jefferson Hospital via Hickman Road and State Farm Boulevard, serving the Rivanna Ridge Shopping Center and Department of Motor Vehicles along the way. Routing back to the Downtown Transit Station is operated utilizing the same alignment. Service on Route 24 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:45 p.m. and 11:45 p.m. As an option, routing on Fairway Avenue could be forfeited to a more direct path of travel on Meade Avenue while maintaining the same 60-minute route-trip cycle time.

Figure 2-6

Near-Term Service Plan Map (Evening Service)



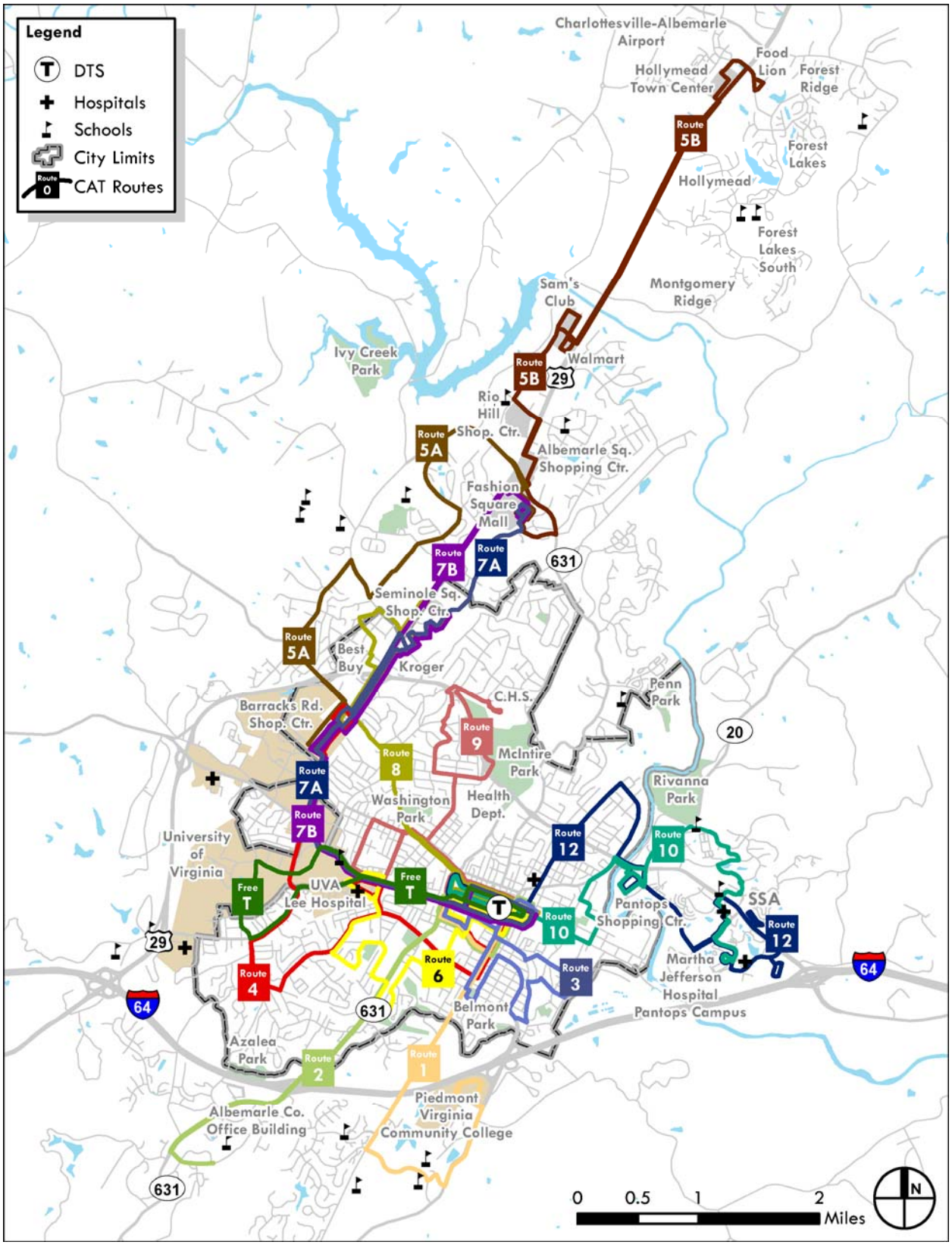
3 Short-Range Service Plan (4-6 Years)

The short-range plan reflects a 14% increase in service-hours and includes service expansion both inside and outside of the Charlottesville city limits. Evening service offerings are also improved in the short-range plan. Highlights of the short-range service plan are:

- Maintenance of service improvements implemented in the near-term service plan;
- Improved midday frequency on Route 3, Monday-Saturday;
- New Hollymead service;
- New connectivity between South Charlottesville, UVA and Barracks Road Shopping Center via Route 4;
- Service to the new Hillsdale Drive extension;
- Service to the new Albemarle Place development;
- Service to the new McIntire Park YMCA; and
- Simplification of night service nomenclature plus additional areas served.

A map depicting the short-range changes to daytime and evening services is shown in Figure 3-1 followed by more detailed descriptions of the short-range service plan by area.

Figure 3-1
Short-Range Service Plan Map (Systemwide)



Northeast Charlottesville and Pantops Area

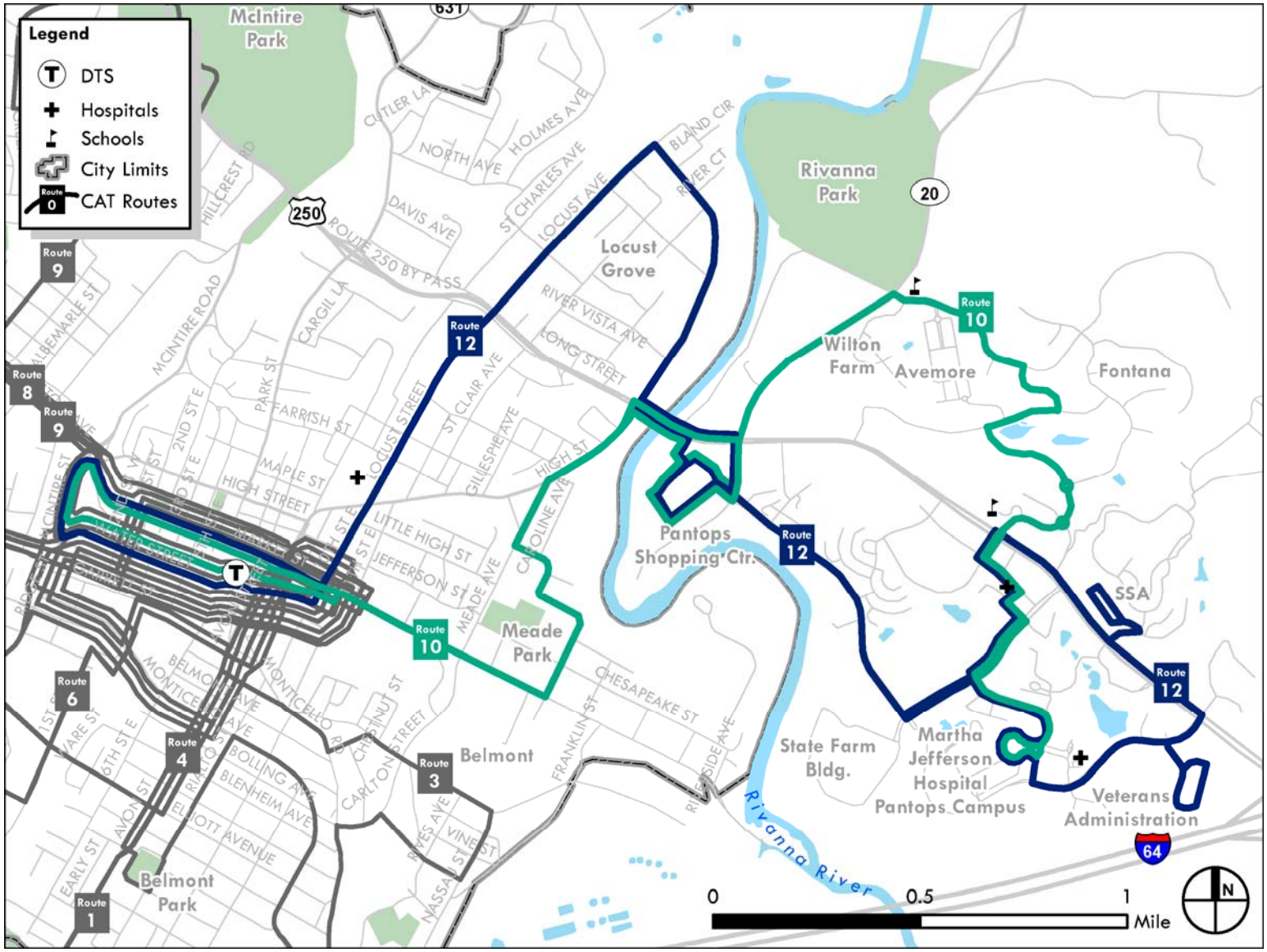
In an effort to minimize disruption to passengers, all routing modifications in northeast Charlottesville and Pantops were implemented during the first phase of the TDP. Therefore, there are no modifications planned in the short-range time horizon. Figure 3-2 depicts the service maintained in Northeast Charlottesville and Pantops in the short-range plan.

Route 10 – There are no further recommended changes to Route 10's alignment or schedule in the short-range service plan.

Route 12 – There are no further recommended changes to Route 12's alignment or schedule in the short-range service plan.

Figure 3-2

Short-Range Service Plan Map (Northeast Charlottesville and Pantops Area)



South Charlottesville

Service modifications in South Charlottesville are kept to a minimum since much of the area was impacted during the first phase of the TDP service plan. Figure 3-3 depicts the recommended route alignment changes for South Charlottesville in the short-range plan.

Route 1 – There are no further recommended changes to Route 1's alignment or schedule in the short-range service plan.

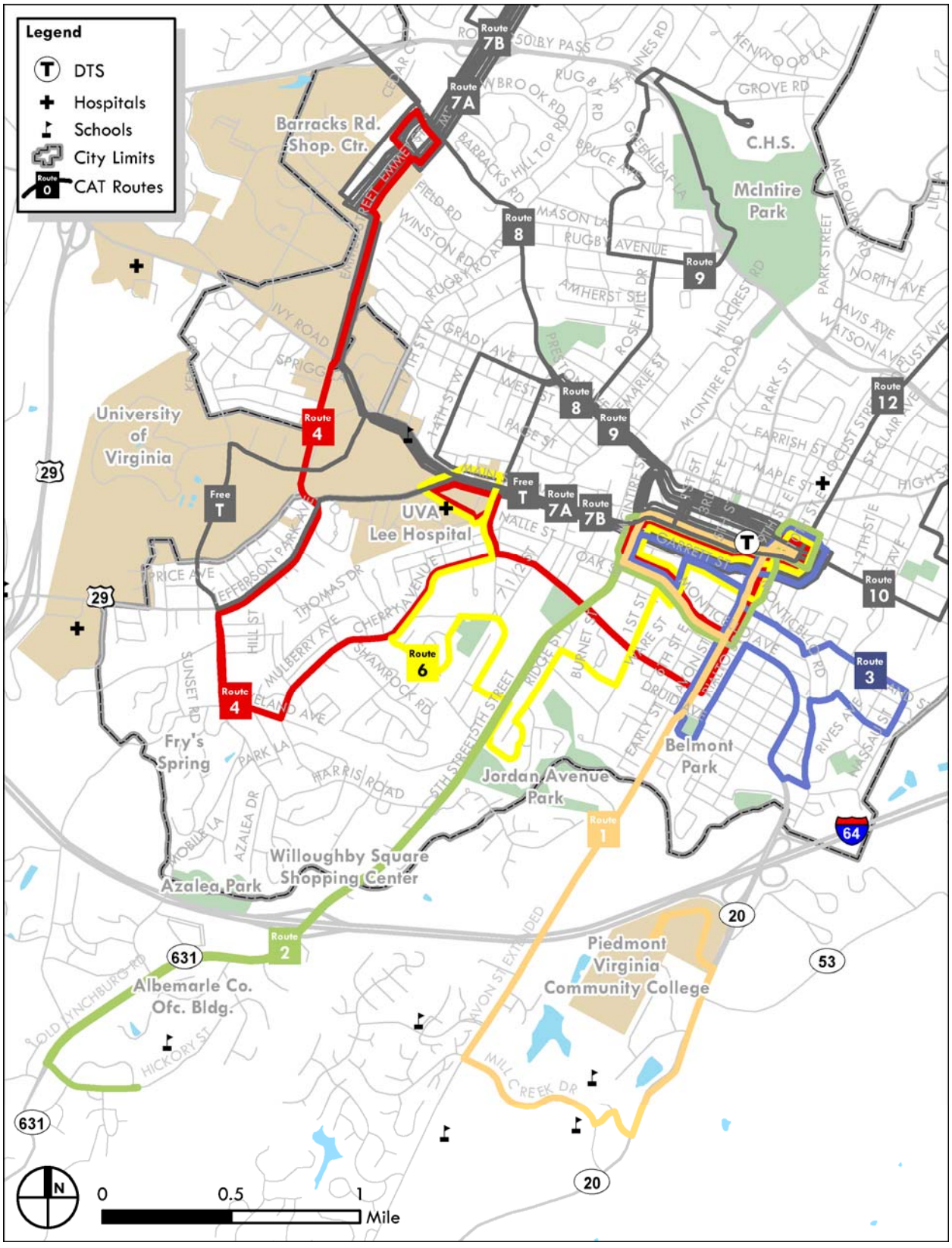
Route 2 – There are no further recommended changes to Route 2's alignment or schedule in the short-range service plan.

Route 3 – There are no further recommended changes to Route 3's alignment in the short-range service plan. However, the schedule is recommended to be improved to 30-minute frequency during the midday hours on weekdays and Saturdays. Route 3 would no longer be interlined with Routes 4 and 6.

Route 4 – An extension to Barracks Road Shopping Center is proposed for Route 4. Between the DTS and UVA Hospital, Route 4's alignment remains unchanged from what was implemented in the near-term service plan. From UVA Hospital, the alignment is extended by completing a one-way loop around the hospital via Crispell Drive, Lee Street, Jefferson Park Avenue, West Main Street and Roosevelt Brown Boulevard. At Cherry Avenue, Route 4 turns right and continues to Fry's Spring. The current turn-around loop is eliminated. Instead, Route 4 turns right on Cleveland Avenue and right on Jefferson Park Avenue. At Emmett Street, Route 4 will travel north through the UVA campus, terminating at Barracks Road Shopping Center. The return trip is operated using the same alignment. Service to Johnson Village is eliminated in this recommendation due to low utilization noted in the October 2010 ridecheck. Route 4 would no longer be interlined with Route 3. However, the interline with Route 6 would be maintained.

Route 6 – There are no further recommended changes to Route 6's alignment or schedule in the short-range service plan. Route 6 would no longer be interlined with Route 3. However, the interline with Route 4 would be maintained.

Figure 3-3
Short-Range Service Plan Map (South Charlottesville)



UVA and Northwest Charlottesville

Service modifications in the UVA and Northwest Charlottesville area are designed to accommodate new development and road configurations that are anticipated to open. Figure 3-4 depicts the recommended route alignment changes for the UVA and Northwest Charlottesville area in the short-range plan.

Free Trolley – There are no recommended changes to the Free Trolley's alignment or schedule in the short-range service plan.

Route 7 – With the planned extension of Hillsdale Drive, two new alignments are recommended for Route 7 in the short-range service plan (see below).

Route 7A – The proposed alignment for Route 7A mimics the near-term recommendation for Route 7 between DTS and the Emmet Street Kroger. However, from here Route 7A will take advantage of the new Hillsdale Drive extension and continue to the Fashion Square Mall directly via Hillsdale Drive. The return trip is also proposed to operate via Hillsdale Drive. Service is proposed to operate at 30-minute frequency, daily. Evening service would be provided Monday through Saturday. Route 7A is proposed to be interlined with Route 7B at the Fashion Square Mall whenever both routes are in operation.

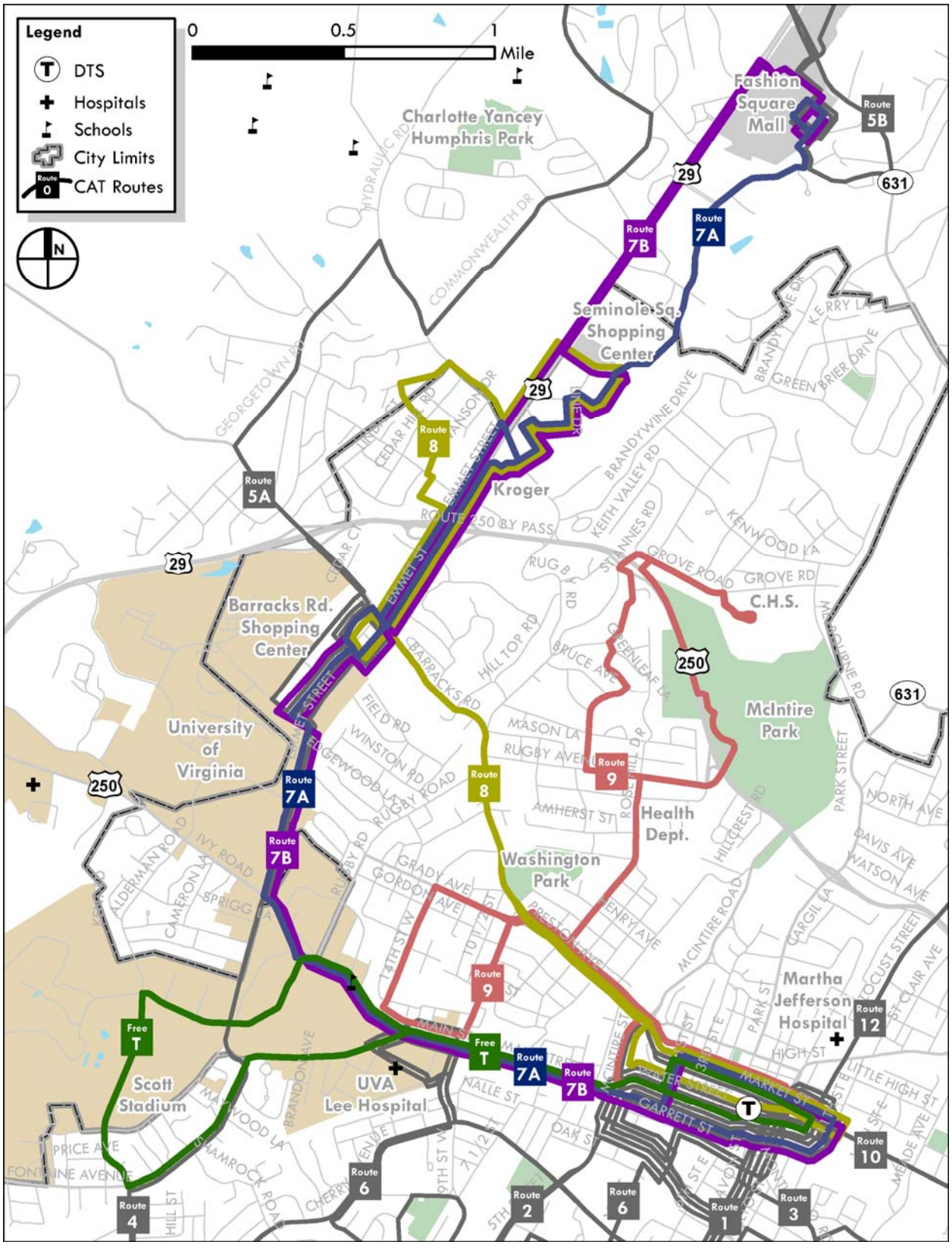
Route 7B – The proposed alignment for Route 7B mimics the near-term recommendation for Route 7 between DTS and the Emmet Street Kroger. However, from here Route 7B will maintain service to Seminole Square and continue to the Fashion Square Mall via Seminole Trail. The return trip is also proposed to operate via Seminole Trail. Service is proposed to operate at 30-minute frequency, Monday through Saturday. Evening service is not proposed at this time. Route 7B is proposed to be interlined with Route 7A at the Fashion Square Mall whenever both routes are in operation.

Route 8 – With the opening of Albemarle Place, Route 8 is proposed to serve the development after departing Seminole Square. Specific routing within the development will be defined once the street network is made available. Optimally, Route 8 would enter Albemarle Place via Seminole Trail (utilizing a signalized crossing aligned with Seminole Square) and exit the development via Hydraulic Road. From here, Route 8 is proposed to serve the Meadows community via Inglewood Drive, Berkshire Road and Angus Road before returning to Emmet Street to resume the current route alignment back to DTS.

Route 9 – A new YMCA is planned for McIntire Park. Therefore, it is recommended that Route 9 serve this facility. From Rose Hill Drive, Route 9 would turn right on Rugby Drive and continue under US 250 into McIntire Park. The route would then merge onto US 250 from within the park and exit at Meadowbrook Heights Road. From here, Route 9 would turn right on Grove Road and resume its regular routing.

Figure 3-4

Short-Range Service Plan Map (UVA and Northwest Charlottesville)



North Charlottesville and Albemarle County

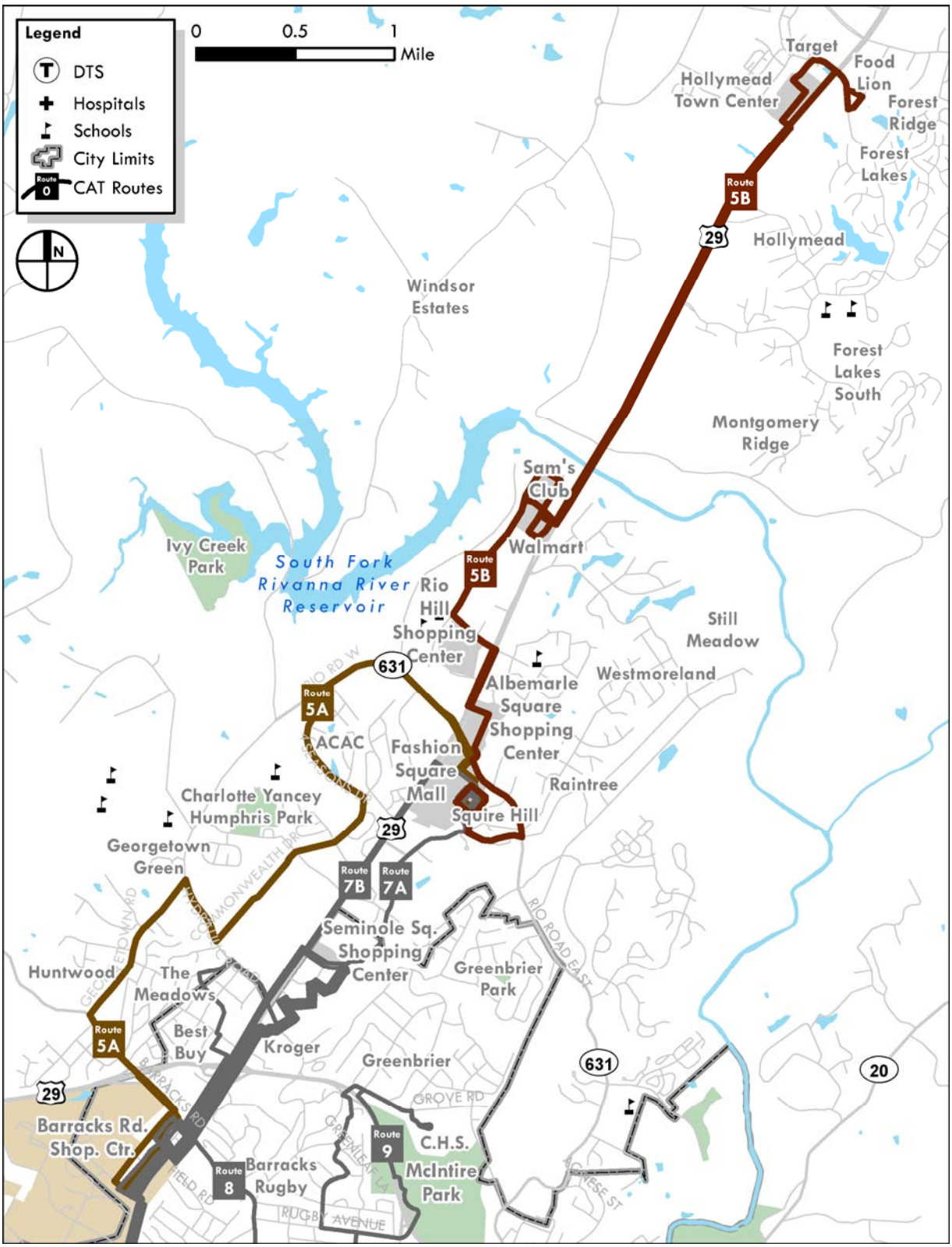
Service modifications in North Charlottesville and Albemarle County are designed to respond to the growth that has occurred in the region. Figure 3-5 depicts the recommended route alignment changes for North Charlottesville and Albemarle County in the short-range plan.

Route 5 – With a planned service extension to Hollymead, two new routes are recommended to replace Route 5 in the short-range service plan (see below).

Route 5A – The new Route 5A alignment will consist of the southernmost portions of Route 5 between Barracks Road Shopping Center and Fashion Square Mall, as was implemented in the near-term service plan. Service would continue to be offered at 30-minute frequency, Monday-Saturday, including evenings.

Route 5B – The new Route 5B alignment will consist of the northernmost portions of Route 5 between Fashion Square Mall and Walmart. In addition, Route 5B would continue north on US 29 to serve retail developments in the Hollymead area including Food Lion and Target. Since this area is in a dynamic state of growth, specific routing through the developments is yet to be defined. Service on Route 5B would continue to be offered at 30-minute frequency, Monday-Saturday, including evenings.

Figure 3-5
Short-Range Service Plan Map (North Charlottesville and Albemarle County)



Evening Service

In the short-range service plan, the special evening service route numbers are eliminated. Instead, the daytime routing is maintained during the evening hours. This results in a simpler system that provides consistent routing in the evening and offers new evening service for some residents. Figure 3-6 depicts the recommended evening route alignment changes in the short-range plan. Routes that will now be operating in the evening are as follows:

Free Trolley – Evening service will be provided Monday through Saturday at 30-minute frequency until 11:48 p.m.

Route 1 – Evening service will be provided Monday through Saturday at 60-minute frequency until 11:15 p.m. During the evening hours, Routes 1 and 3 are proposed to be interlined.

Route 3 – Evening service will be provided Monday through Saturday at 60-minute frequency until 11:45 p.m. During the evening hours, Routes 3 and 1 are proposed to be interlined.

Route 4 – New evening service will be provided Monday through Saturday at 60-minute frequency until 11:45 p.m. Large (29') buses should be used for Route 4 evening service due to the new connection to Barracks Road shopping center.

Route 5A – Evening service will be provided Monday through Saturday at 30-minute frequency until 11:15 p.m.

Route 5B – Evening service will be provided Monday through Saturday at 30-minute frequency until 11:15 p.m.

Route 6 – New evening service will be provided Monday through Saturday at 60-minute frequency until 11:45 p.m.

Route 7A – Evening service will be provided Monday through Saturday at 30-minute frequency until 11:45 p.m.

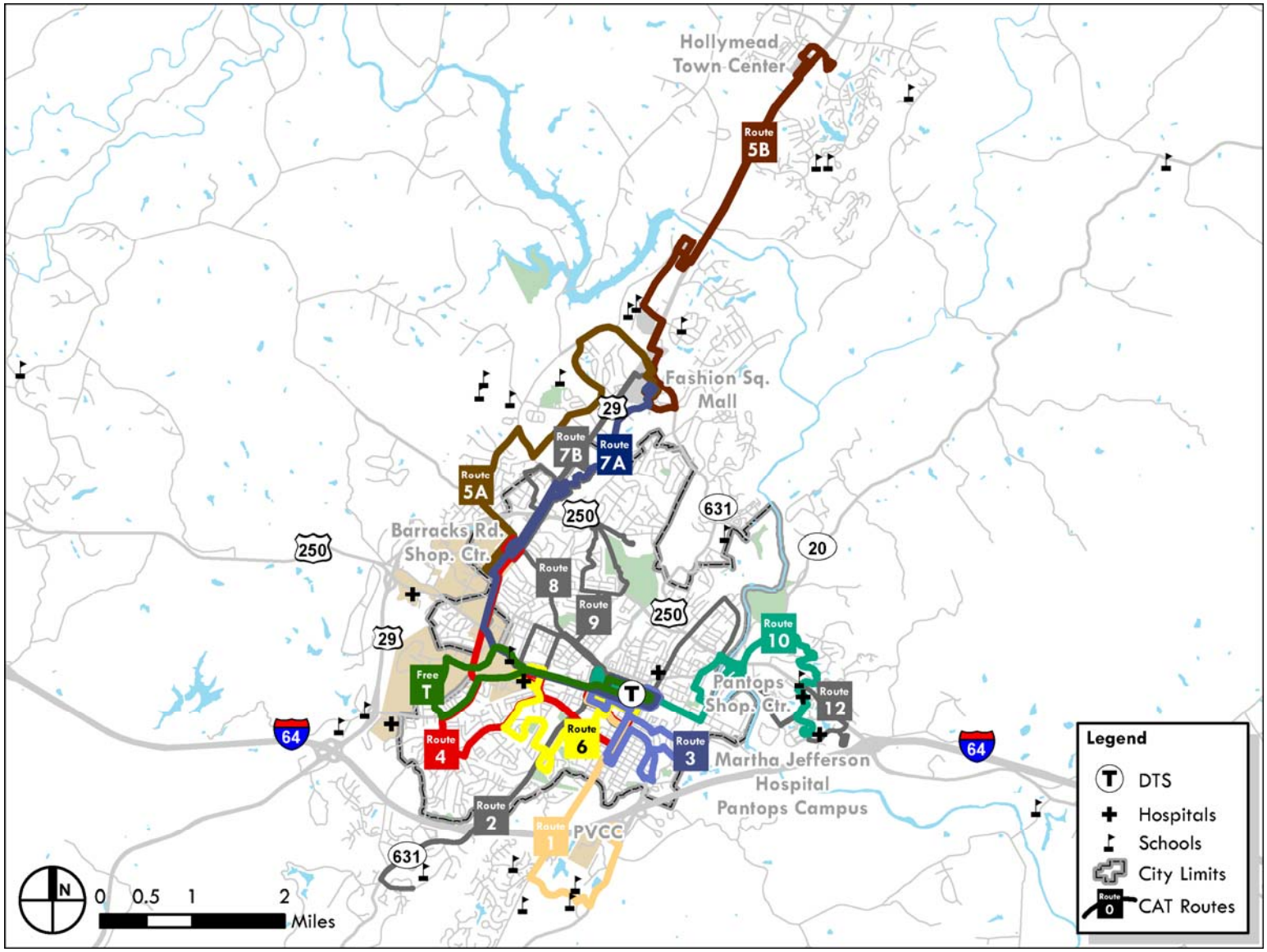
Route 10 – Evening service will be provided Monday through Saturday at 60-minute frequency until 11:45 p.m.

Sunday Service

The short-range service plan does not include expansion of Sunday service (presently consisting of Route 7 and the Free Trolley). Throughout this project's outreach process, a desire for expanded Sunday service has been expressed. An expansion of Sunday service is included in the long-range service plan.

Figure 3-6

Short-Range Service Plan Map (Evening Service)

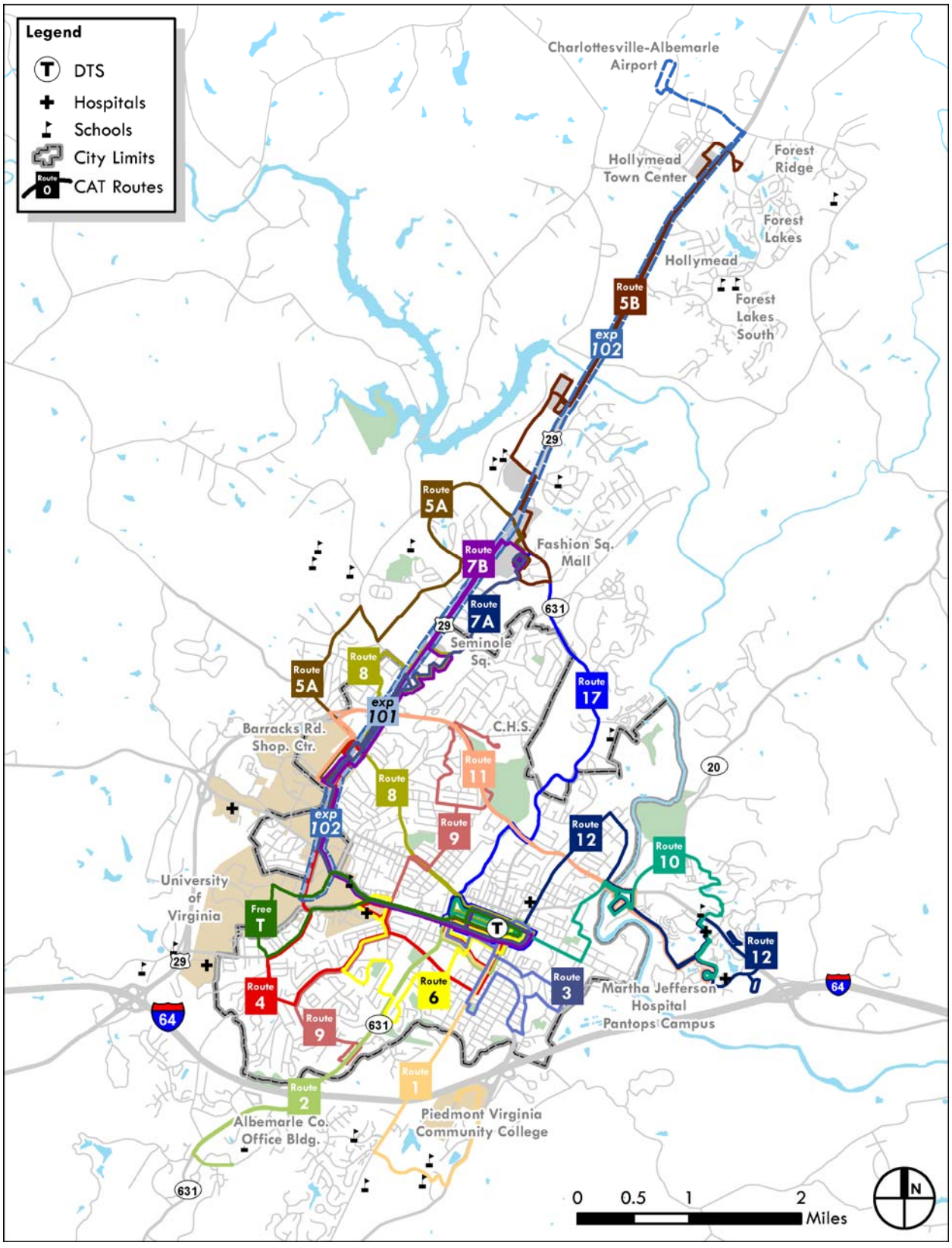


4 Long-Range Service Plan (2035)

In 2008, the Thomas Jefferson Planning District Commission (TJPDC) completed a Regional Transit Authority (RTA) Plan for the City of Charlottesville and Albemarle County. As part of this study, several service plan scenarios were developed, each with an incrementally greater level of investment required. The long-range service plan outlined in this TDP builds upon the near-term and short-range recommendations described in the two previous chapters and attempts to integrate the resulting service with the range of options presented in the RTA Plan. It is also important to note that CAT will required to submit a revised Transit Development Plan spanning FY 2018-FY 2023 during the initial timeframe of this service plan. Thus, these recommendations will be revisited and refined in advance of FY 2018. Highlights of the long-range service plan are:

- Maintenance of service improvements implemented in the near-term and short-range service plans;
- New Meadow Creek service between Downtown Charlottesville and the Fashion Square Mall;
- New limited-stop service along the US 29 corridor between UVA and Charlottesville-Albemarle Airport;
- New crosstown services between Barracks Road Shopping Center and Martha Jefferson Hospital as well as between Charlottesville High School and South Charlottesville; and
- Significant expansion of Sunday service route offerings.

Figure 4-1
Long-Range Service Plan Map (Systemwide)



Northeast Charlottesville and Pantops Area

The long-range service plan features a new crosstown service that connects Barracks Road Shopping Center, Pantops Shopping Center and Martha Jefferson Hospital. Additional frequency and new Sunday service also highlight the improvements in Northeast Charlottesville and Pantops. Figure 4-2 depicts the recommended service alignments for Northeast Charlottesville and the Pantops area in the long-range plan.

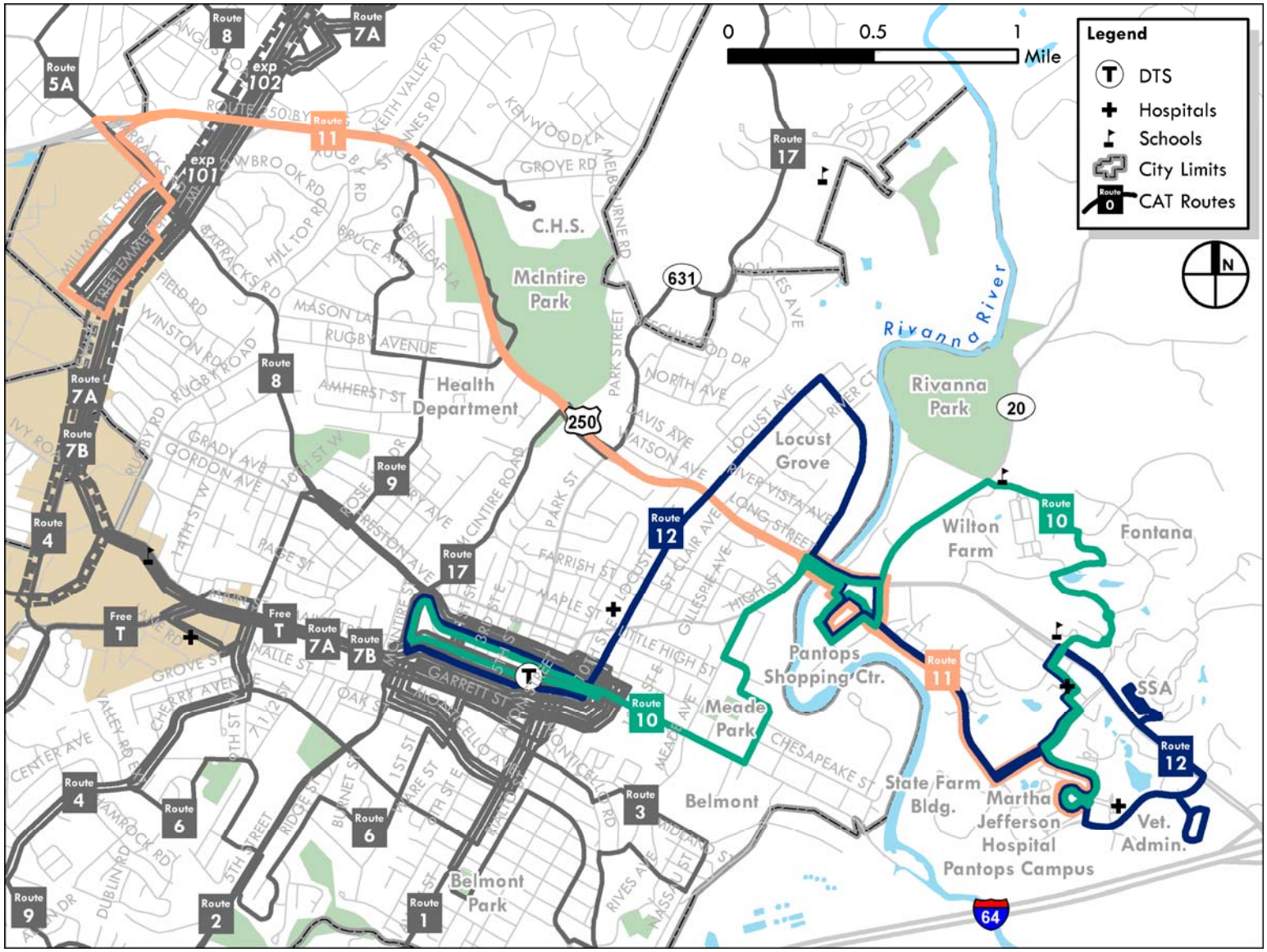
Route 10 – There are no further recommended changes to Route 10's alignment in the long-range service plan. However, new Sunday service is proposed to operate at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 11 – A new crosstown route is proposed to connect Barracks Road Shopping Center, Pantops Shopping Center and Martha Jefferson Hospital via US 250. Service would operate on weekdays only at 30-minute frequency during peak-hours and 60-minute frequency during midday hours. Night service would not be offered.

Route 12 – There are no further recommended changes to Route 12's alignment or schedule in the long-range service plan.

Figure 4-2

Long-Range Service Plan Map (Northeast Charlottesville and Pantops Area)



South Charlottesville

There are few changes to route alignment in South Charlottesville since much of the area was impacted during the first phase of the TDP service plan. However, new Sunday service is added for most of the routes as described below. Figure 4-3 depicts the recommended service alignments for South Charlottesville in the long-range plan.

Route 1 – There are no further recommended changes to Route 1's alignment in the long-range service plan. However, new Sunday service is proposed to operate at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 2 – There are no further recommended changes to Route 2's alignment or schedule in the long-range service plan.

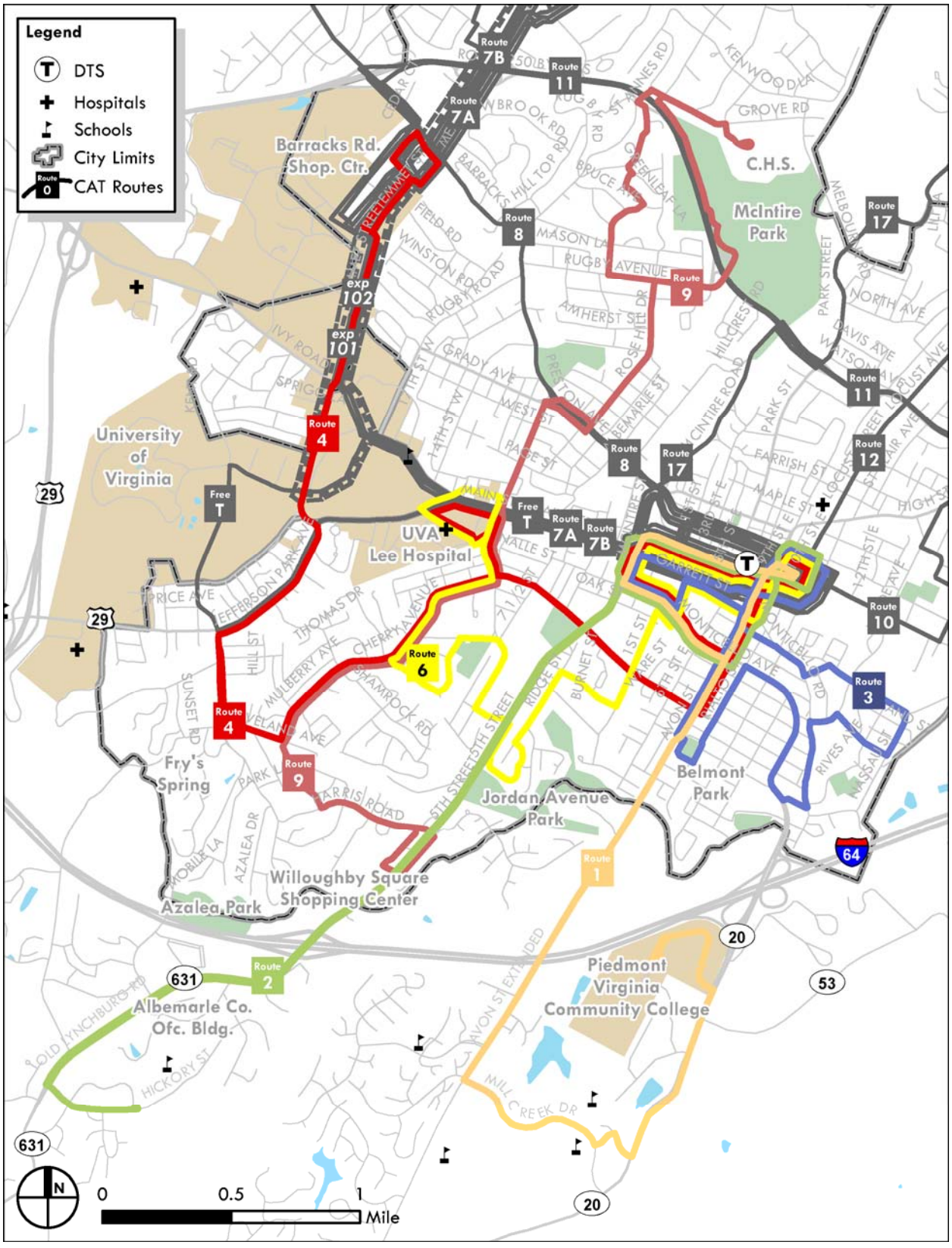
Route 3 – There are no further recommended changes to Route 3's alignment in the long-range service plan. However, new Sunday service is proposed to operate at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 4 – There are no further recommended changes to Route 4's alignment in the long-range service plan. However, new Sunday service is proposed to operate at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 6 – There are no further recommended changes to Route 6's alignment in the long-range service plan. However, new Sunday service is proposed to operate at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 9 – In the long-range service plan, Route 9 is proposed to take on more crosstown characteristics by abandoning segments of the route between the downtown Charlottesville and Rose Hill Drive. These segments are served by Route 8 and represent a duplication of service that is not warranted. Instead, Route 9 is proposed to continue south to the Food Lion at Willoughby Square. From Rose Hill Drive, Route 9 will turn right on Preston Avenue and bear left onto Grady Avenue. At 10th Street, the service will travel south and continue onto Roosevelt Brown Boulevard. Route 9 will then turn right on Cherry Avenue and continue on Willard Avenue until reaching Harris Road. At Harris Road, the route turns left and continues to Willoughby Square. Routing back to the Charlottesville High School and the intact portions of the route is operated utilizing the same alignment starting at Harris Road. Service on Route 9 is recommended to operate at 60-minute frequency, Monday-Saturday between 6:45 a.m. and 6:45 p.m.

Figure 4-3
Long-Range Service Plan Map (South Charlottesville)



UVA and Northwest Charlottesville

Service modifications in the UVA and Northwest Charlottesville area are designed to improve connectivity throughout the region and enhance service levels along the busy US 29 corridor. Figure 4-4 depicts the recommended route alignment changes for the UVA Northwest Charlottesville area in the long-range plan.

Free Trolley – There are no recommended changes to the Free Trolley's alignment or schedule in the long-range service plan.

Route 7A – There are no further recommended changes to Route 7A's alignment or schedule in the long-range service plan. However, it is important to note that the northern portions of Route 7A will serve as feeder service for proposed new routes 101 and 102.

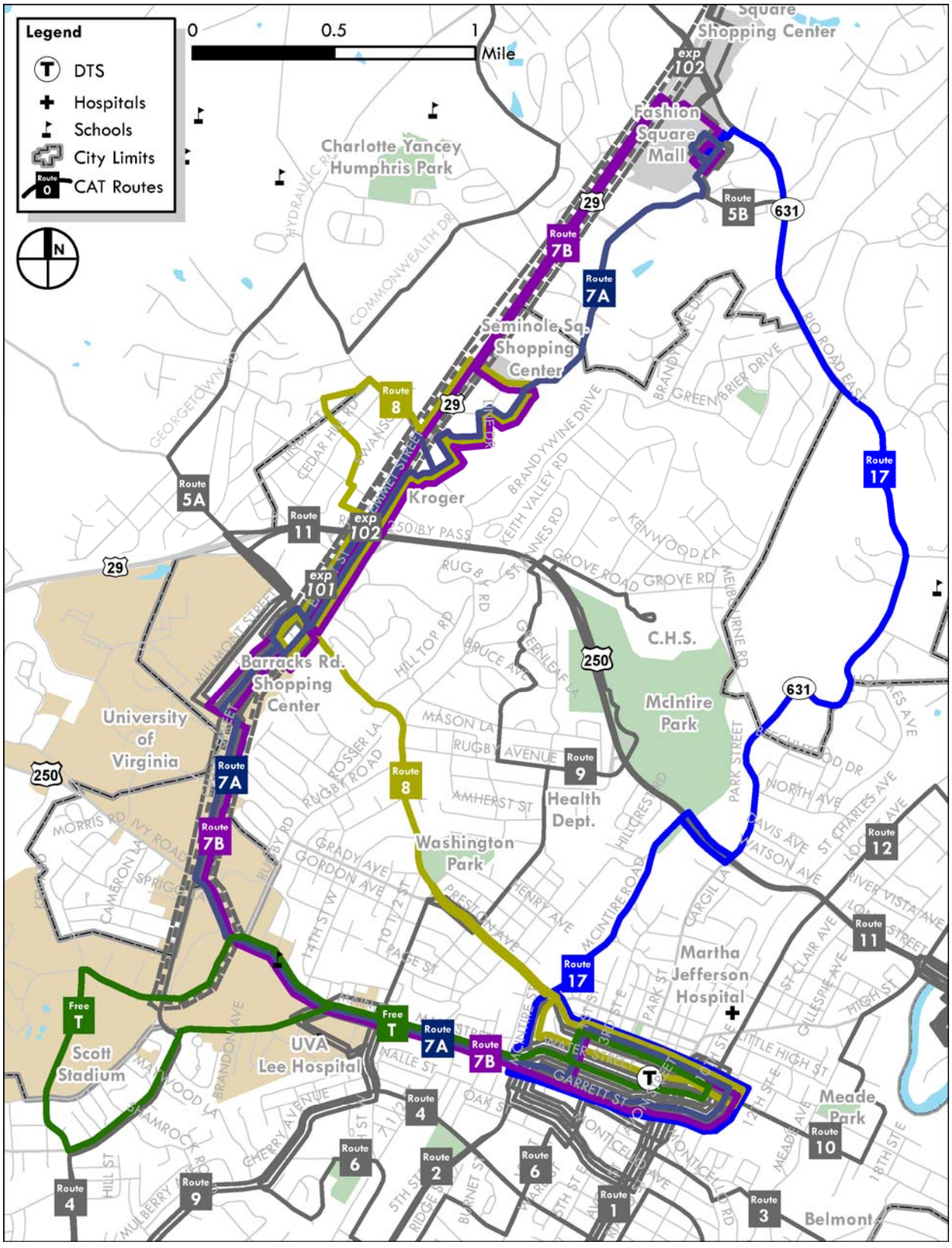
Route 7B – There are no further recommended changes to Route 7B's alignment or schedule in the long-range service plan. However, it is important to note that the northern portions of Route 7B will serve as feeder service for proposed new routes 101 and 102.

Route 8 – There are no recommended changes to Route 8's alignment or schedule in the long-range service plan. However, it is important to note that the northern portions of Route 8 will serve as feeder service for proposed new routes 101 and 102.

Route 17 – A new route is proposed to connect Downtown Charlottesville and the Fashion Square Mall via Meadow Creek Parkway. Service would operate on weekdays at 30-minute frequency throughout the day. Weekend and night service would not be offered initially.

Figure 4-4

Long-Range Service Plan Map (UVA and Northwest Charlottesville)



North Charlottesville and Albemarle County

Service modifications in North Charlottesville and Albemarle County are designed to support new limited stop service in the US 29 corridor. While this service is initially planned to operate as limited-stop bus service, as ridership grows it may become a candidate for Bus Rapid Transit (BRT) or future rail applications. Figure 4-5 depicts the recommended route alignment changes for North Charlottesville and Albemarle County in the short-range plan.

Route 5A – There are no recommended changes to Route 5A's alignment in the long-range service plan. However, it is important to note that Route 5A will serve as feeder service for proposed new routes 101 and 102. New Sunday service is also proposed for Route 5A operating at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 5B – There are no recommended changes to Route 5B's alignment in the long-range service plan. However, it is important to note that Route 5B will serve as feeder service for proposed new routes 101 and 102. New Sunday service is also proposed for Route 5B operating at 60-minute frequency between 8:15 a.m. and 7:15 p.m.

Route 101 – A new limited stop service is recommended to operate between the UVA campus and Fashion Square Mall via US 29. Unlike the current routes in this corridor, Route 101 would not deviate into the various shopping centers along the way. Instead, the service would remain in the corridor with limited stops where routes intersect and/or where major activity centers are within reasonable walking distance. With this in mind, bus stop placement and pedestrian circulation around those stops will be critical. Park & Ride facilities where feasible should also be considered. Recommended stops along Route 101 include:

- UVA Main Campus (McCormick Road/Emmet Street vicinity)
- Barracks Road Shopping Center (Emmet Street/Barracks Road vicinity)
- Hydraulic Road
- Greenbrier Drive
- Fashion Square Mall (Rio Road vicinity)

Service on Route 101 is initially recommended to operate at 30-minute frequency, Monday-Friday between 6:30 a.m. and 7:15 p.m. and will be interlined with Route 102 at UVA.

Route 102 – A new limited stop service is recommended to operate between the UVA campus and Charlottesville-Albemarle Airport via US 29. Unlike the current routes in this corridor, Route 102 would not deviate into the various shopping centers along the way. Instead, the service would remain in the corridor with limited stops where routes intersect and/or where major activity centers are within reasonable walking distance. With this in mind, bus stop

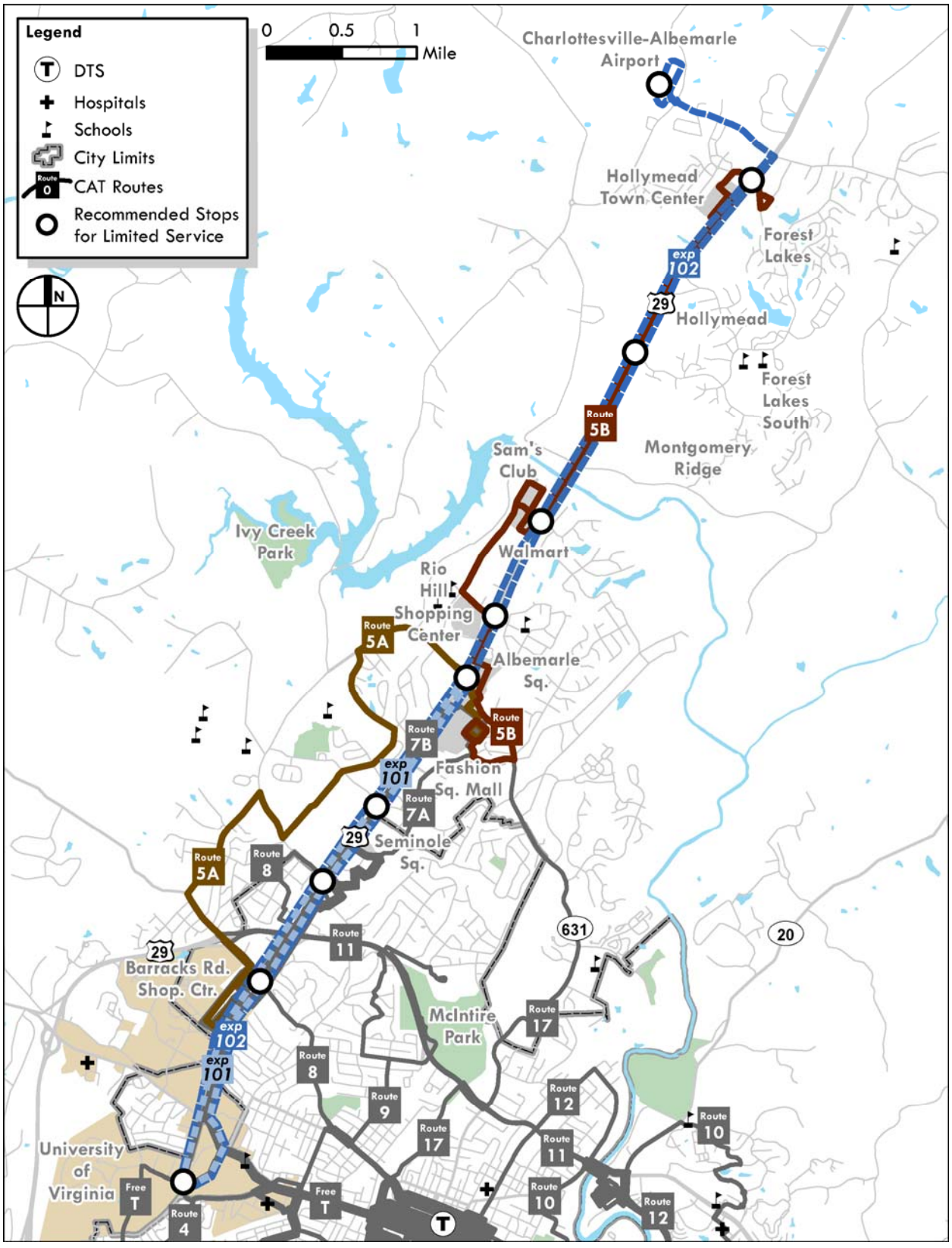
placement and pedestrian circulation around those stops will be critical. Park & Ride facilities where feasible should also be considered. Recommended stops along Route 102 include:

- UVA Main Campus (McCormick Road/Emmet Street vicinity)
- Barracks Road Shopping Center (Emmet Street/Barracks Road vicinity)
- Hydraulic Road
- Greenbrier Drive
- Fashion Square Mall (Rio Road vicinity)
- Woodbrook Drive
- Hilton Heights Road
- Hollymead (Ashford Boulevard)
- Timberwood Boulevard
- Charlottesville-Albemarle Airport

Service on Route 102 is initially recommended to operate at 30-minute frequency, Monday-Friday between 6:30 a.m. and 7:45 p.m. and will be interlined with Route 102 at UVA.

Figure 4-5

Long-Range Service Plan Map (North Charlottesville and Albemarle County)



Evening Service

In the long-range service plan, evening service that was implemented in the short-range plan is maintained. There are no additional routes added during the evening hours.

Sunday Service

The long-range service plan includes a significant expansion of Sunday service. This expansion is in response to the desire for expanded Sunday service that was expressed throughout the public outreach process of this TDP. Figure 4-6 depicts the recommended Sunday route alignments in the long-range plan. Routes that will now be operating on Sundays are as follows:

Free Trolley – Sunday service will be provided at 30-minute frequency from 8:00 a.m. until noon. At noon, frequency will improve to 20 minutes until the end of service at approximately 5:40 p.m.

Route 1 – Sunday service will be provided at 60-minute frequency from 8:45 a.m. until 6:15 p.m. On Sundays, Routes 1 and 3 are proposed to be interlined.

Route 3 – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 6:45 p.m. On Sundays, Routes 3 and 1 are proposed to be interlined.

Route 4 – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 7:15 p.m. On Sundays, Routes 4 and 6 are proposed to be interlined.

Route 5A – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 7:15 p.m.

Route 5B – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 7:15 p.m.

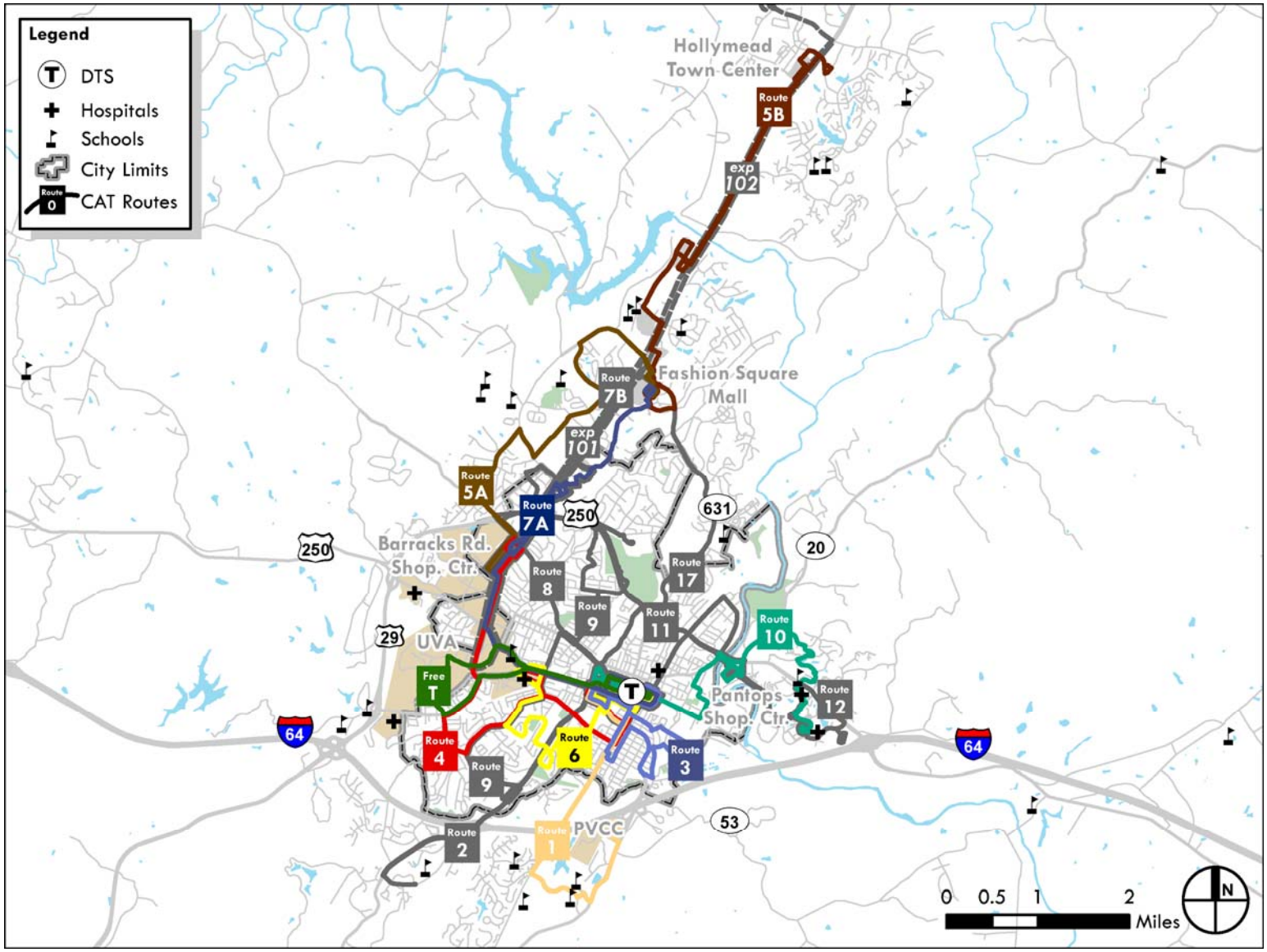
Route 6 – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 7:15 p.m. On Sundays, Routes 6 and 4 are proposed to be interlined.

Route 7A – Sunday service will be provided at 30-minute frequency from 7:45 a.m. until 7:45 p.m.

Route 10 – Sunday service will be provided at 60-minute frequency from 8:15 a.m. until 7:15 p.m.

Figure 4-6

Long-Range Service Plan Map (Sunday Service)



5 Capital Needs

Transfer Facilities

As the CAT system grows, the need for safe, convenient locations to accommodate passenger transfers also increases. This need is particularly intensified as less emphasis is placed on the Downtown Transit Station (DTS) and more connections are made available in secondary locations such as Barracks Road Shopping Center and Fashion Square Mall. While not all connections points warrant a major capital investment, emphasis should be placed where transit and passengers volumes are highest. Table 5-1 lists off-street transfer locations with the greatest number of buses passing through per peak hour.

Table 5-1
Projected Transit Volumes at Transit Centers

Location	Routes Served	Buses per Peak Hour*
Downtown Transit Station	1, 2, 3, 4, 6, 7A, 7B, 8, 10, 12, 17, Trolley	22
Barracks Road Shopping Center	4, 5A, 7A, 7B, 8, 11	18
Fashion Square Mall	5A, 5B, 7A, 7B, 17	10
Seminole Square	7A, 7B, 8	10
Pantops Shopping Center	10, 11, 12	8
UVA Hospital (Lee Street)	4, 6	6
Martha Jefferson Hospital	10, 11, 12	4

** Peak Hour Buses based on complete implementation of Long-Range Plan*

Based on these findings, Barracks Road Shopping Center is in the most critical need of facility investment as the Downtown Transit Station currently has the capacity to support 22 buses per hour. Barracks Road Shopping Center, on the other hand, has no formal facilities other than two passenger shelters and benches. Staging is accommodated in a drive aisle that is mixed with general purpose traffic. This creates safety issues as passengers cross between buses and private vehicles navigating the shopping center. In recent years, modifications have been considered that would create an east-west transit passage through the middle of the Barracks Road Shopping Center property. This would allow direct, perpendicular movement between Emmet Street and Millmont Street. This new passage would also feature linear transit pull-out bays, capable of supporting multiple buses at any given time. The most recent estimated cost for this improvement is $1.7 million and should be a top priority for facility improvements. Following Barracks Road Shopping Center, the Fashion Square Mall should be the next facility considered for investment.

Bus Stops and Amenities

Throughout the CAT system, bus stops are clearly marked with street-side signage, indicating the route that serves that location. Bus stops with higher passenger volumes also feature shelters, benches, static bus schedule displays and/or electronic bus finders. CAT has been much more progressive than similarly-sized properties and is encouraged to maintain these amenities as the system grows.

Vehicles

As CAT grows, new vehicles will need to be procured to accommodate expansion as well as replacements. CAT has recently committed to diesel-electric hybrid technology in an effort to improve operating efficiency and demonstrate environmental leadership. In the near-term plan, there is no increase in peak vehicles. However, the short-range service plan increases the peak requirement by three buses and the long-range service plan increases the peak requirement by another eight. It is important to note that cut-away vehicles are used during the evening hours on select routes in place of full-size 29 and 35-foot buses. This practice is expected to continue throughout the course of this service plan. Table 5-2 outlines projected bus needs through each time horizon of the service plan.

Table 5-2
Projected Peak Vehicle Requirements

	Current	Near-Term	Short-Range	Long-Range
29' & 35' Buses				
Peak Requirement	19	19	21	29
Total Fleet	27	27	27	35
Replica Trolley Buses				
Peak Requirement	3	3	3	3
Total Fleet	5	5	5	4
Cut-away Buses				
Peak Requirement	3	3	3	3
Total Fleet	4	4	4	4
TOTAL PEAK REQUIREMENT	25	25	27	35
TOTAL FLEET	36	36	36	43

Appendix A

Current Operating Statistics

Current Service – Operating Hours and Frequency

Weekdays

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	15	15	15	15
1A	East Market	0620 - 1820	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
1B	PVCC	0645 - 1745	2.50	5.75	3.25	n/a	11.50	60	60	60	n/a
2A	Locust Ave	0620 - 1820	2.50	6.00	3.50	n/a	12.00	60	60	60	n/a
2B	Southwood	0645 - 1745	2.50	5.75	3.25	n/a	11.50	60	60	60	n/a
3	Belmont	0620 - 1820	2.75	6.00	4.00	n/a	12.75	30	60	30	n/a
4	UVA Hospital, Fry's Spring, Downtown	0630 - 1807	3.50	5.00	3.50	n/a	12.00	30	60	30	n/a
5	Barracks Road to Walmart	0615 - 2215	2.75	6.00	3.00	4.00	15.75	30	30	30	30
6	Ridge, UVA & Downtown	0645 - 1815	2.25	6.00	4.00	n/a	12.25	30	60	30	n/a
7	Downtown to Fashion Square	0630 - 2315	4.25	4.25	3.50	5.00	17.00	15	15	15	30
8	Seminole & Downtown	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	60	30	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Pantops	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
21	(Night) Belmont	1845 - 2315	n/a	n/a	n/a	4.75	4.75	n/a	n/a	n/a	30
22	(Night) Prospect Ave, UVA Hospital	1845 - 2315	n/a	n/a	n/a	4.75	4.75	n/a	n/a	n/a	30
23	(Night) PVCC	1845 - 2245	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
24	(Night) Pantops	1915 - 2315	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
TOTALS											

Saturday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	UVA Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	15	15	15	15
1A	East Market	0620 - 1820	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
1B	PVCC	0645 - 1745	2.50	5.75	3.25	n/a	11.50	60	60	60	n/a
2A	Locust Ave	0620 - 1820	2.50	6.00	3.50	n/a	12.00	60	60	60	n/a
2B	Southwood	0645 - 1745	2.50	5.75	3.25		11.50	60	60	60	n/a
3	Belmont	0620 - 1820	2.75	6.00	4.00	n/a	12.75	60	60	60	n/a
4	UVA Hospital, Fry's Spring, Downtown	0630 - 1807	3.00	6.00	3.00	n/a	12.00	60	60	60	n/a
5	Barracks Road to Walmart	0615 - 2215	2.75	6.00	3.00	4.00	15.75	30	30	30	30
6	Ridge, UVA & Downtown	0645 - 1745	2.25	6.00	4.00	n/a	12.25	60	60	60	n/a
7	Downtown to Fashion Square	0630 - 2315	4.25	4.25	3.50	5.00	17.00	15	15	15	30
8	Seminole & Downtown	0630 - 1800	3.00	6.00	3.00	n/a	12.00	60	60	60	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Pantops	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
21	(Night) Belmont	1845 - 2315	n/a	n/a	n/a	4.75	4.75	n/a	n/a	n/a	30
22	(Night) Prospect Ave, UVA Hospital	1845 - 2315	n/a	n/a	n/a	4.75	4.75	n/a	n/a	n/a	30
23	(Night) PVCC	1845 - 2245	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
24	(Night) Pantops	1915 - 2315	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
TOTALS											

Sunday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0800 - 1700	4.50	2.50	2.75	n/a	9.75	30	45	45	n/a
7	Downtown to Fashion Square	0745 - 1715	5.00	2.25	2.75	n/a	10.00	30	30	30	n/a
TOTALS											

Current Service – Running Times and Route Distances

Weekdays

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1A	East Market	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	5.0
1B	PVCC	27	3	10%	30	27	3	10%	30	27	3	10%	30	n/a	n/a	n/a	n/a	7.5
2A	Locust Ave	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	5.3
2B	Southwood	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	8.2
3	Belmont	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	4.7
4	UVA Hospital, Fry's Spring, Downtown	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	13.9
5	Barracks Road to Walmart	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	8.2
6	Ridge, UVA & Downtown	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	6.0
7	Downtown to Fashion Square	27	6	10%	60	42	6	7%	90	42	6	7%	90	27	6	10%	60	6.3
8	Seminole & Downtown	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.5
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.8
10	Pantops	57	3	5%	60	57	3	5%	60	57	3	5%	60	n/a	n/a	n/a	n/a	11.8
21	(Night) Belmont	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	4.9
22	(Night) Prospect Ave, UVA Hospital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.6
23	(Night) PVCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	7.6
24	(Night) Pantops	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.5
TOTALS			77	13%	**600**		66	10%	**645**		66	10%	**645**		31	10%	**300**	

Saturday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	UVA Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1A	East Market	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	5.0
1B	PVCC	27	3	10%	30	27	3	10%	30	27	3	10%	30	n/a	n/a	n/a	n/a	7.5
2A	Locust Ave	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	5.3
2B	Southwood	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	8.2
3	Belmont	22	8	27%	30	22	8	27%	30	22	8	27%	30	n/a	n/a	n/a	n/a	4.7
4	UVA Hospital, Fry's Spring, Downtown	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	13.9
5	Barracks Road to Walmart	42.5	5	6%	90	42.5	5	6%	90	42.5	5	6%	90	42.5	5	6%	90	8.2
6	Ridge, UVA & Downtown	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	6.0
7	Downtown to Fashion Square	27	6	10%	60	42	6	7%	90	42	6	7%	90	27	6	10%	60	6.3
8	Seminole & Downtown	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.5
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.8
10	Pantops	57	3	5%	60	57	3	5%	60	57	3	5%	60	n/a	n/a	n/a	n/a	11.8
21	(Night) Belmont	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	4.9
22	(Night) Prospect Ave, UVA Hospital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.6
23	(Night) PVCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	7.6
24	(Night) Pantops	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.5
TOTALS			72	12%	**600**		61	9%	**645**		61	9%	**645**		26	9%	**300**	

Sunday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	42	3	7%	45	42	3	7%	45	n/a	n/a	n/a	n/a	5.7
7	Downtown to Fashion Square	27	6	10%	60	42	6	7%	90	42	6	7%	90	n/a	n/a	n/a	n/a	6.3
TOTALS			9	10%	**90**		9	7%	**135**		9	7%	**135**					

Current Service – Hours, Miles and Peak Bus Requirements

Weekdays

Route Number	Route Description	Average Weekday			Bus Requirements				Avg. Speed	Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville		Albemarle	
											%	Hours	%	Hours
Trolley	Free Trolley	40.0	44.8	387.6	2.00	3.00	3.00	2.00	9.7	6:40 a.m. - 11:48 p.m.	100%	44.8	0%	0.0
1A	East Market	4.8	6.5	65.0	0.50	0.50	0.50	0.00	13.5	6:20 a.m. - 6:42 p.m.	100%	6.5	0%	0.0
1B	PVCC	5.5	6.0	90.0	0.50	0.50	0.50	0.00	16.4	6:45 a.m. - 6:12 p.m.	100%	6.0	0%	0.0
2A	Locust Ave	4.8	6.5	68.9	0.50	0.50	0.50	0.00	14.4	6:20 a.m. - 6:42 p.m.	100%	6.5	0%	0.0
2B	Southwood	6.0	6.0	98.4	0.50	0.50	0.50	0.00	16.4	6:45 a.m. - 6:15 p.m.	50%	3.0	50%	3.0
3	Belmont	7.3	10.0	94.0	1.00	0.50	1.00	0.00	12.9	6:20 a.m. - 6:42 p.m.	100%	10.0	0%	0.0
4	UVA Hospital, Fry's Spring, Downtown	17.4	19.0	264.1	2.00	1.00	2.00	0.00	15.2	6:45 a.m. - 6:37 p.m.	100%	19.0	0%	0.0
5	Barracks Road to Walmart	42.0	47.3	516.6	3.00	3.00	3.00	3.00	12.3	6:15 a.m. - 10:15 p.m.	0%	0.0	100%	47.3
6	Ridge, UVA & Downtown	9.5	9.5	114.0	1.00	0.50	1.00	0.00	12.0	6:45 a.m. - 6:45 p.m.	100%	9.5	0%	0.0
7	Downtown to Fashion Square	67.7	73.5	730.8	4.00	6.00	6.00	2.00	10.8	6:30 a.m. - 11:15 p.m.	100%	73.5	0%	0.0
8	Seminole & Downtown	16.3	19.0	161.5	2.00	1.00	2.00	0.00	9.9	6:30 a.m. - 6:55 p.m.	100%	19.0	0%	0.0
9	Charlottesville High School	11.0	12.0	129.6	1.00	1.00	1.00	0.00	11.8	6:45 a.m.- 6:40 p.m.	100%	12.0	0%	0.0
10	Pantops	12.4	13.0	153.4	1.00	1.00	1.00	0.00	12.4	6:15 a.m. - 7:12 p.m.	0%	0.0	100%	13.0
21	(Night) Belmont	4.5	5.0	49.0	0.00	0.00	0.00	1.00	10.9	6:45 p.m. - 11:30 p.m.	100%	5.0	0%	0.0
22	(Night) Prospect Ave, UVA Hospital	4.5	5.0	56.0	0.00	0.00	0.00	1.00	12.4	6:45 p.m. - 11:30 p.m.	100%	5.0	0%	0.0
23	(Night) PVCC	2.3	2.5	38.0	0.00	0.00	0.00	0.50	16.5	6:45 p.m. - 11:30 p.m.	100%	2.5	0%	0.0
24	(Night) Pantops	2.3	2.5	27.5	0.00	0.00	0.00	0.50	12.0	7:15 p.m. - 11:35 p.m.	0%	0.0	100%	2.5
TOTALS		**258.3**	**288.1**	**3044.4**	**19.00**	**19.00**	**22.00**	**10.00**	**11.8**		**77%**	**222.3**	**23%**	**65.8**

Saturday

Route Number	Route Description	Average Saturday			Bus Requirements				Avg. Speed	Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville		Albemarle	
											%	Hours	%	Hours
Trolley	UVA Trolley	40.0	44.8	387.6	2.00	3.00	3.00	2.00	9.7	6:40 a.m. - 11:48 p.m.	100%	44.8	0%	0.0
1A	East Market	4.8	6.5	65.0	0.50	0.50	0.50	0.00	13.5	6:20 a.m. - 6:42 p.m.	100%	6.5	0%	0.0
1B	PVCC	5.5	6.0	90.0	0.50	0.50	0.50	0.00	16.4	6:45 a.m. - 6:12 p.m.	100%	6.0	0%	0.0
2A	Locust Ave	4.8	6.5	68.9	0.50	0.50	0.50	0.00	14.4	6:20 a.m. - 6:42 p.m.	100%	6.5	0%	0.0
2B	Southwood	6.0	6.0	98.4	0.50	0.50	0.50	0.00	16.4	6:45 a.m. - 6:15 p.m.	50%	3.0	50%	3.0
3	Belmont	4.8	6.5	61.1	0.50	0.50	0.50	0.00	12.7	6:20 a.m. - 6:42 p.m.	100%	6.5	0%	0.0
4	UVA Hospital, Fry's Spring, Downtown	11.1	12.0	166.8	1.00	1.00	1.00	0.00	15.0	6:45 a.m. - 6:25 p.m.	100%	12.0	0%	0.0
5	Barracks Road to Walmart	44.6	47.3	516.6	3.00	3.00	3.00	3.00	11.6	6:15 a.m. - 10:55 p.m.	0%	0.0	100%	47.3
6	Ridge, UVA & Downtown	6.0	6.0	72.0	0.50	0.50	0.50	0.00	12.0	6:45 a.m. - 6:15 p.m.	100%	6.0	0%	0.0
7	Downtown to Fashion Square	67.7	73.5	730.8	4.00	6.00	6.00	2.00	10.8	6:20 a.m. - 11:42 p.m.	100%	73.5	0%	0.0
8	Seminole & Downtown	10.4	12.0	102.0	1.00	1.00	1.00	0.00	9.8	6:30 a.m. - 6:25 p.m.	100%	12.0	0%	0.0
9	Charlottesville High School	11.0	12.0	129.6	1.00	1.00	1.00	0.00	11.8	6:45 a.m. - 6:40 p.m.	100%	12.0	0%	0.0
10	Pantops	12.4	13.0	153.4	1.00	1.00	1.00	0.00	12.4	6:15 a.m. - 7:12 p.m.	0%	0.0	100%	13.0
21	(Night) Belmont	4.5	5.0	49.0	0.00	0.00	0.00	1.00	10.9	6:45 p.m. - 11:30 p.m.	100%	5.0	0%	0.0
22	(Night) Prospect Ave, UVA Hospital	4.5	5.0	56.0	0.00	0.00	0.00	1.00	12.4	6:45 p.m. - 11:30 p.m.	100%	5.0	0%	0.0
23	(Night) PVCC	2.3	2.5	38.0	0.00	0.00	0.00	0.50	16.5	6:45 p.m. - 11:12 p.m.	100%	2.5	0%	0.0
24	(Night) Pantops	2.3	2.5	27.5	0.00	0.00	0.00	0.50	12.0	7:15 p.m. - 11:35 p.m.	0%	0.0	100%	2.5
TOTALS		**242.7**	**267.1**	**2812.7**	**16.00**	**19.00**	**19.00**	**10.00**	**11.6**		**75%**	**201.3**	**25%**	**65.8**

Sunday

Route Number	Route Description	Average Sunday			Bus Requirements				Avg. Speed	Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville		Albemarle	
											%	Hours	%	Hours
Trolley	Free Trolley	9.0	9.8	91.2	1.00	1.00	1.00	0.00	10.1	8:00 a.m. - 5:42 p.m.	100%	9.8	0%	0.0
7	Downtown to Fashion Square	23.0	25.1	252.0	2.00	3.00	3.00	0.00	11.0	7:45 a.m. - 5:57 p.m.	100%	25.1	0%	0.0
TOTALS		**32.0**	**34.9**	**343.2**	**3.00**	**4.00**	**4.00**	**0.00**	**10.7**		**100%**	**34.9**	**0%**	**0.0**

Appendix B

Near-Term Service Plan Operating Statistics

Near-Term Service Plan – Operating Hours and Frequency

Weekdays

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	15	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 1745	2.25	6.00	3.25	n/a	11.50	60	60	60	n/a
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 1815	2.75	6.00	3.75	n/a	12.50	30	60	30	n/a
4	Cherry/UVA Hospital/Frys Spring	0630 - 1800	2.50	6.00	3.75	n/a	12.25	30	60	30	n/a
5	Barracks Road to Walmart	0615 - 2215	2.75	6.00	4.00	3.00	15.75	30	30	30	30
6	Ridge/Forrest Hills/UVA hospital	0645 - 1815	2.25	6.00	4.00	n/a	12.25	30	60	30	n/a
7	Downtown to Fashion Square	0630 - 2315	4.25	4.25	3.50	5.00	17.00	15	15	15	30
8	Seminole & Downtown	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	60	30	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 1745	2.50	6.00	3.75	n/a	12.25	60	60	60	n/a
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
21	(Night) Belmont	1915 - 2315	n/a	n/a	n/a	5.00	4.50	n/a	n/a	n/a	60
22	(Night) Prospect Ave/UVA Hospital	1845 - 2315	n/a	n/a	n/a	5.00	5.00	n/a	n/a	n/a	30
23	(Night) Avon/Mill Creek/PVCC	1845 - 2245	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
24	(Night) Meade/Pantops/Wilton Farms/MJH	1845 - 2245	n/a	n/a	n/a	5.00	5.00	n/a	n/a	n/a	60
TOTALS											

Saturday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	30	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 1745	2.25	6.00	3.25	n/a	11.50	60	60	60	n/a
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
4	Cherry/UVA Hospital/Frys Spring	0630 - 1730	2.50	6.00	3.25	n/a	11.75	60	60	60	n/a
5	Barracks Road to Walmart	0615 - 2215	2.75	6.00	4.00	3.00	15.75	30	30	30	30
6	Ridge/Forrest Hills/UVA hospital	0645 - 1745	2.25	6.00	3.50	n/a	11.75	60	60	60	n/a
7	Downtown to Fashion Square	0630 - 2315	4.25	4.25	3.50	5.00	17.00	15	15	15	30
8	Seminole & Downtown	0630 - 1730	3.00	6.00	3.00	n/a	12.00	60	60	60	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 1745	2.50	6.00	3.75	n/a	12.25	60	60	60	n/a
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
21	(Night) Belmont	1915 - 2315	n/a	n/a	n/a	5.00	4.50	n/a	n/a	n/a	60
22	(Night) Prospect Ave/UVA Hospital	1845 - 2315	n/a	n/a	n/a	5.00	5.00	n/a	n/a	n/a	30
23	(Night) Avon/Mill Creek/PVCC	1845 - 2245	n/a	n/a	n/a	4.50	4.50	n/a	n/a	n/a	60
24	(Night) Meade/Pantops/Wilton Farms/MJH	1845 - 2245	n/a	n/a	n/a	5.00	5.00	n/a	n/a	n/a	60
TOTALS											

Sunday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0800 - 1700	4.50	2.50	2.75	n/a	9.75	30	45	45	n/a
7	Downtown to Fashion Square	0745 - 1715	5.00	2.25	3.25	n/a	10.50	30	30	30	n/a
TOTALS											

Near-Term Service Plan – Running Times and Route Distances

Weekdays

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	5.3
4	Cherry/UVA Hospital/Frys Spring	45	0	0%	45	45	0	0%	45	45	0	0%	45	n/a	n/a	n/a	n/a	10.8
5	Barracks Road to Walmart	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	8.6
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	n/a	n/a	n/a	n/a	8.4
7	Downtown to Fashion Square	35	6	8%	75	42	6	7%	90	42	6	7%	90	27	6	10%	60	6.3
8	Seminole & Downtown	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.5
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.8
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
21	(Night) Belmont	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	25	5	17%	30	5.3
22	(Night) Prospect Ave/UVA Hospital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.6
23	(Night) Avon/Mill Creek/PVCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30	0	0%	30	9.9
24	(Night) Meade/Pantops/Wilton Farms/MJH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	55	5	8%	60	11.0
TOTALS			54	9%	**615**		56	9%	**645**		56	9%	**645**		32	10%	**330**	

Saturday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	5.3
4	Cherry/UVA Hospital/Frys Spring	45	0	0%	45	45	0	0%	45	45	0	0%	45	n/a	n/a	n/a	n/a	10.8
5	Barracks Road to Walmart	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	8.6
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	n/a	n/a	n/a	n/a	8.4
7	Downtown to Fashion Square	35	6	8%	75	42	6	7%	90	42	6	7%	90	27	6	10%	60	6.3
8	Seminole & Downtown	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.5
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.8
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
21	(Night) Belmont	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	25	5	17%	30	5.3
22	(Night) Prospect Ave/UVA Hospital	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	27	3	10%	30	5.6
23	(Night) Avon/Mill Creek/PVCC	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	30	0	0%	30	9.9
24	(Night) Meade/Pantops/Wilton Farms/MJH	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	55	5	8%	60	11.0
TOTALS			54	9%	**615**		56	9%	**645**		56	9%	**645**		32	10%	**330**	

Sunday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	n/a	n/a	n/a	n/a	5.7
7	Downtown to Fashion Square	27	6	10%	60	42	6	7%	90	42	6	7%	90	n/a	n/a	n/a	n/a	6.3
TOTALS			9	10%	**90**		11	8%	**135**		11	8%	**135**					

Near-Term Service Plan – Hours, Miles and Peak Bus Requirements

Weekdays

Route Number	Route Description	Average Weekday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	36.4	40.8	342.0	2.00	3.00	3.00	1.00	9.4	6:40 a.m. - 11:48 p.m.	100%	40.8	0%	0.0
1	Avon/Mill Creek/PVCC	5.5	5.5	108.9	0.50	0.50	0.50	0.00	19.8	6:45 a.m. - 6:15 p.m.	100%	5.5	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	6:15 a.m. - 6:45 p.m.	50%	3.3	50%	3.3
3	Belmont	8.3	10.0	106.0	1.00	0.50	1.00	0.00	12.8	6:15 a.m. - 6:45 p.m.	100%	10.0	0%	0.0
4	Cherry/UVA Hospital/Frys Spring	14.3	14.3	205.2	1.50	0.75	1.50	0.00	14.3	6:30 a.m. - 6:45 p.m.	100%	14.3	0%	0.0
5	Barracks Road to Walmart	42.0	47.3	538.7	3.00	3.00	3.00	3.00	12.8	6:15 a.m. - 10:55 p.m.	0%	0.0	100%	47.3
6	Ridge/Forrest Hills/UVA hospital	12.6	14.3	159.6	1.50	0.75	1.50	0.00	12.7	6:45 a.m. - 7:00 p.m.	100%	14.3	0%	0.0
7	Downtown to Fashion Square	72.0	77.8	730.8	5.00	6.00	6.00	2.00	10.2	6:30 a.m. - 11:15 p.m.	100%	77.8	0%	0.0
8	Seminole & Downtown	17.4	19.0	161.5	2.00	1.00	2.00	0.00	9.3	6:30 a.m. - 7:00 p.m.	100%	19.0	0%	0.0
9	Charlottesville High School	11.0	12.0	129.6	1.00	1.00	1.00	0.00	11.8	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	12.0	13.0	154.7	1.00	1.00	1.00	0.00	12.9	6:30 a.m. - 6:45 p.m.	50%	6.5	50%	6.5
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
21	(Night) Belmont	2.1	2.5	26.5	0.00	0.00	0.00	0.50	12.6	7:15 p.m. - 11:45 p.m.	100%	2.5	0%	0.0
22	(Night) Prospect Ave/UVA Hospital	4.5	5.0	56.0	0.00	0.00	0.00	1.00	12.4	6:45 p.m. - 11:45 p.m.	100%	5.0	0%	0.0
23	(Night) Avon/Mill Creek/PVCC	2.5	2.5	49.5	0.00	0.00	0.00	0.50	19.8	6:45 p.m. - 11:15 p.m.	100%	2.5	0%	0.0
24	(Night) Meade/Pantops/Wilton Farms/MJH	4.6	5.0	55.0	0.00	0.00	0.00	1.00	12.0	6:45 p.m. - 11:45 p.m.	50%	2.5	50%	2.5
TOTALS		**262.7**	**288.5**	**3093.1**	**20.00**	**19.00**	**22.00**	**9.00**	**11.8**		**77%**	**222.5**	**23%**	**66.1**

Saturday

Route Number	Route Description	Average Saturday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	34.6	38.8	319.2	1.00	3.00	3.00	1.00	9.2	6:40 a.m. - 11:48 p.m.	100%	38.8	0%	0.0
1	Avon/Mill Creek/PVCC	5.5	5.5	108.9	0.50	0.50	0.50	0.00	19.8	6:45 a.m. - 6:15 p.m.	100%	5.5	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	6:15 a.m. - 6:45 p.m.	50%	3.3	50%	3.3
3	Belmont	5.5	6.5	68.9	0.50	0.50	0.50	0.00	12.5	6:15 a.m. - 6:45 p.m.	100%	6.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring	9.1	9.1	129.6	0.75	0.75	0.75	0.00	14.2	6:30 a.m. - 6:15 p.m.	100%	9.1	0%	0.0
5	Barracks Road to Walmart	42.0	47.3	538.7	3.00	3.00	3.00	3.00	12.8	6:15 a.m. - 10:55 p.m.	0%	0.0	100%	47.3
6	Ridge/Forrest Hills/UVA hospital	8.0	9.0	100.8	0.75	0.75	0.75	0.00	12.6	6:45 a.m. - 6:30 p.m.	100%	9.0	0%	0.0
7	Downtown to Fashion Square	72.0	77.8	730.8	5.00	6.00	6.00	2.00	10.2	6:30 a.m. - 11:15 p.m.	100%	77.8	0%	0.0
8	Seminole & Downtown	11.1	12.0	102.0	1.00	1.00	1.00	0.00	9.2	6:30 a.m. - 6:30 p.m.	100%	12.0	0%	0.0
9	Charlottesville High School	11.0	12.0	129.6	1.00	1.00	1.00	0.00	11.8	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	12.0	13.0	154.7	1.00	1.00	1.00	0.00	12.9	6:30 a.m. - 6:45 p.m.	50%	6.5	50%	6.5
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
21	(Night) Belmont	2.1	2.5	26.5	0.00	0.00	0.00	0.50	12.6	7:15 p.m. - 11:45 p.m.	100%	2.5	0%	0.0
22	(Night) Prospect Ave/UVA Hospital	4.5	5.0	56.0	0.00	0.00	0.00	1.00	12.4	6:45 p.m. - 11:45 p.m.	100%	5.0	0%	0.0
23	(Night) Avon/Mill Creek/PVCC	2.5	2.5	49.5	0.00	0.00	0.00	0.50	19.8	6:45 p.m. - 11:15 p.m.	100%	2.5	0%	0.0
24	(Night) Meade/Pantops/Wilton Farms/MJH	4.6	5.0	55.0	0.00	0.00	0.00	1.00	12.0	6:45 p.m. - 11:45 p.m.	50%	2.5	50%	2.5
TOTALS		**242.0**	**265.5**	**2839.3**	**16.00**	**19.00**	**19.00**	**9.00**	**11.7**		**75%**	**199.5**	**25%**	**66.1**

Sunday

Route Number	Route Description	Average Sunday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	8.8	9.8	91.2	1.00	1.00	1.00	0.00	10.4	8:00 a.m. - 5:42 p.m.	100%	9.8	0%	0.0
7	Downtown to Fashion Square	24.4	26.6	264.6	2.00	3.00	3.00	0.00	10.8	7:45 a.m. - 5:57 p.m.	100%	26.6	0%	0.0
TOTALS		**33.2**	**36.4**	**355.8**	**3.00**	**4.00**	**4.00**	**0.00**	**10.7**		**100%**	**36.4**	**0%**	**0.0**

Appendix C

Short-Range Service Plan Operating Statistics

Short-Range Service Plan – Operating Hours and Frequency

Weekdays

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	15	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 2245	2.25	6.00	4.00	4.25	16.50	60	60	60	60
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 2315	2.75	6.00	3.25	5.50	17.50	30	30	30	60
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	0630 - 2245	2.50	6.00	3.50	5.00	17.00	30	60	30	60
5A	Georgetown/West Rio	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
5B	Hollymead	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
6	Ridge/Forrest Hills/UVA hospital	0645 - 2245	2.25	6.00	3.00	5.75	17.00	30	60	30	60
7A	US 29/Fashion Square via Hillside Dr	0615 - 2315	2.75	6.00	4.00	4.25	17.00	30	30	30	30
7B	US 29/Fashion Square via Seminole Tr	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
8	Preston/Barracks/Seminole Square	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	60	30	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 2245	2.50	6.00	4.00	4.75	17.25	60	60	60	60
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
TOTALS											

Saturday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	30	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 2245	2.25	6.00	4.00	4.25	16.50	60	60	60	60
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 2315	2.75	6.00	3.25	5.50	17.50	30	30	30	60
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	0630 - 2245	2.50	6.00	3.50	5.00	17.00	60	60	60	60
5A	Georgetown/West Rio	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
5B	Hollymead	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
6	Ridge/Forrest Hills/UVA hospital	0645 - 2245	2.25	6.00	3.00	5.75	17.00	60	60	60	60
7A	US 29/Fashion Square via Hillside Dr	0615 - 2315	2.75	6.00	4.00	4.25	17.00	30	30	30	30
7B	US 29/Fashion Square via Seminole Tr	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
8	Preston/Barracks/Seminole Square	0630 - 1730	3.00	6.00	3.00	n/a	12.00	60	60	60	n/a
9	Charlottesville High School	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 2245	2.50	6.00	4.00	4.75	17.25	60	60	60	60
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
TOTALS											

Sunday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0800 - 1700	4.50	2.50	2.75	n/a	9.75	30	45	45	n/a
7A	Downtown to Fashion Square	0745 - 1715	5.00	2.25	3.25	n/a	10.50	30	30	30	n/a
TOTALS											

Short-Range Service Plan – Running Times and Route Distances

Weekdays

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	30	0	0%	30	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	25	5	17%	30	5.3
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	65	10	13%	75	65	10	13%	75	65	10	13%	75	60	0	0%	60	13.7
5A	Georgetown/West Rio	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	5.4
5B	Hollymead	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	6.2
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	40	20	33%	60	8.4
7A	US 29/Fashion Square via Hillside Dr	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	6.3
7B	US 29/Fashion Square via Seminole Tr	40	10	11%	90	40	10	11%	90	40	10	11%	90	n/a	n/a	n/a	n/a	6.6
8	Preston/Barracks/Seminole Square	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.9
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.6
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	55	5	8%	60	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
TOTALS			101	13%	**780**		90	11%	**795**		90	11%	**795**		63	13%	**480**	

Saturday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	30	0	0%	30	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	25	5	17%	30	5.3
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	65	10	13%	75	65	10	13%	75	65	10	13%	75	60	0	0%	60	13.7
5A	Georgetown/West Rio	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	5.4
5B	Hollymead	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	6.2
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	40	20	33%	60	8.4
7A	US 29/Fashion Square via Hillside Dr	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	6.3
7B	US 29/Fashion Square via Seminole Tr	40	10	11%	90	40	10	11%	90	40	10	11%	90	n/a	n/a	n/a	n/a	6.6
8	Preston/Barracks/Seminole Square	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.9
9	Charlottesville High School	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.6
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	55	5	8%	60	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
TOTALS			101	13%	**780**		90	11%	**795**		90	11%	**795**		63	13%	**480**	

Sunday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	n/a	n/a	n/a	n/a	5.7
7A	Downtown to Fashion Square	27	6	10%	60	42	6	7%	90	42	6	7%	90	n/a	n/a	n/a	n/a	6.3
TOTALS			9	10%	**90**		11	8%	**135**		11	8%	**135**					

Short-Range Service Plan – Hours, Miles and Peak Bus Requirements

Weekdays

Route Number	Route Description	Average Weekday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	36.4	40.8	342.0	2.00	3.00	3.00	1.00	9.4	6:40 a.m. - 11:48 p.m.	100%	40.8	0%	0.0
1	Avon/Mill Creek/PVCC	8.0	8.0	158.4	0.50	0.50	0.50	0.50	19.8	6:45 a.m. - 11:15 p.m.	100%	8.0	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	6:15 a.m. - 6:45 p.m.	50%	3.3	50%	3.3
3	Belmont	12.9	15.5	164.3	1.00	1.00	1.00	0.50	12.7	6:15 a.m. - 11:45 p.m.	100%	15.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	24.5	27.6	315.1	2.50	1.25	2.50	1.00	12.9	6:30 a.m. - 11:45 p.m.	100%	27.6	0%	0.0
5A	Georgetown/West Rio	25.1	30.0	321.0	2.00	2.00	2.00	1.00	12.8	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
5B	Hollymead	25.1	30.0	369.0	2.00	2.00	2.00	1.00	14.7	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
6	Ridge/Forrest Hills/UVA hospital	15.3	18.8	193.2	1.50	0.75	1.50	1.00	12.6	6:45 a.m. - 11:45 p.m.	100%	18.8	0%	0.0
7A	US 29/Fashion Square via Hillside Dr	45.3	51.1	428.4	3.00	3.00	3.00	3.00	9.5	6:15 a.m. - 11:45 p.m.	100%	51.1	0%	0.0
7B	US 29/Fashion Square via Seminole Tr	33.4	37.5	330.0	3.00	3.00	3.00	0.00	9.9	6:30 a.m. - 7:00 p.m.	100%	37.5	0%	0.0
8	Preston/Barracks/Seminole Square	16.3	19.0	169.1	2.00	1.00	2.00	0.00	10.4	6:30 a.m. - 7:00 p.m.	100%	19.0	0%	0.0
9	Charlottesville High School	11.0	12.0	127.2	1.00	1.00	1.00	0.00	11.6	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	16.6	18.0	214.2	1.00	1.00	1.00	1.00	12.9	6:30 a.m. - 11:45 p.m.	50%	9.0	50%	9.0
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
TOTALS		**287.4**	**327.8**	**3401.0**	**23.00**	**21.00**	**24.00**	**10.00**	**11.8**		**76%**	**249.1**	**24%**	**78.8**

Saturday

Route Number	Route Description	Average Saturday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	34.6	38.8	319.2	1.00	3.00	3.00	1.00	9.2	6:40 a.m. - 11:48 p.m.	100%	38.8	0%	0.0
1	Avon/Mill Creek/PVCC	8.0	8.0	158.4	0.50	0.50	0.50	0.50	19.8	6:45 a.m. - 11:15 p.m.	100%	8.0	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	6:15 a.m. - 6:45 p.m.	50%	3.3	50%	3.3
3	Belmont	12.9	15.5	164.3	1.00	1.00	1.00	0.50	12.7	6:15 a.m. - 11:45 p.m.	100%	15.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	19.1	21.3	246.6	1.25	1.25	1.25	1.00	12.9	6:30 a.m. - 11:45 p.m.	100%	21.3	0%	0.0
5A	Georgetown/West Rio	25.1	30.0	321.0	2.00	2.00	2.00	1.00	12.8	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
5B	Hollymead	25.1	30.0	369.0	2.00	2.00	2.00	1.00	14.7	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
6	Ridge/Forrest Hills/UVA hospital	11.3	14.3	142.8	0.75	0.75	0.75	1.00	12.6	6:45 a.m. - 11:45 p.m.	100%	14.3	0%	0.0
7A	US 29/Fashion Square via Hillside Dr	45.3	51.1	428.4	3.00	3.00	3.00	3.00	9.5	6:15 a.m. - 11:45 p.m.	100%	51.1	0%	0.0
7B	US 29/Fashion Square via Seminole Tr	33.4	37.5	330.0	3.00	3.00	3.00	0.00	9.9	6:30 a.m. - 7:00 p.m.	100%	37.5	0%	0.0
8	Preston/Barracks/Seminole Square	10.4	12.0	106.8	1.00	1.00	1.00	0.00	10.3	6:30 a.m. - 6:30 p.m.	100%	12.0	0%	0.0
9	Charlottesville High School	11.0	12.0	127.2	1.00	1.00	1.00	0.00	11.6	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	16.6	18.0	214.2	1.00	1.00	1.00	1.00	12.9	6:30 a.m. - 11:45 p.m.	50%	9.0	50%	9.0
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
TOTALS		**270.3**	**308.0**	**3197.0**	**19.00**	**21.00**	**21.00**	**10.00**	**11.8**		**74%**	**229.3**	**26%**	**78.8**

Sunday

Route Number	Route Description	Average Sunday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	8.8	9.8	91.2	1.00	1.00	1.00	0.00	10.4	8:00 a.m. - 5:42 p.m.	100%	9.8	0%	0.0
7A	Downtown to Fashion Square	24.4	26.6	264.6	2.00	3.00	3.00	0.00	10.8	7:45 a.m. - 5:57 p.m.	100%	26.6	0%	0.0
TOTALS		**33.2**	**36.4**	**355.8**	**3.00**	**4.00**	**4.00**	**0.00**	**10.7**		**100%**	**36.4**	**0%**	**0.0**

Appendix D

Long-Range Service Plan Operating Statistics

Long-Range Service Plan – Operating Hours and Frequency

Weekdays

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	15	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 2245	2.25	6.00	4.00	4.25	16.50	60	60	60	60
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 2315	2.75	6.00	3.25	5.50	17.50	30	30	30	60
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	0630 - 2245	2.50	6.00	3.50	5.00	17.00	30	60	30	60
5A	Georgetown/West Rio	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
5B	Hollymead	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
6	Ridge/Forrest Hills/UVA hospital	0645 - 2245	2.25	6.00	3.00	5.75	17.00	30	60	30	60
7A	US 29/Fashion Square via Hillside Dr	0615 - 2315	2.75	6.00	4.00	4.25	17.00	30	30	30	30
7B	US 29/Fashion Square via Seminole Tr	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
8	Preston/Barracks/Seminole Square	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	60	30	n/a
9	Charlottesville HS/Harris Rd	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 2245	2.50	6.00	4.00	4.75	17.25	60	60	60	60
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
11	Barracks Road/Pantops Crosstown	0630 - 1830	2.50	6.00	4.00	n/a	12.50	30	60	30	n/a
17	MeadowCreek	0630 - 1830	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
101	US 29 Limited (UVA-Fashion Square)	0630 - 1830	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
102	US 29 Limited (UVA-Fashion Square-Hollymead)	0630 - 1830	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
TOTALS											

Saturday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0640 - 2330	2.25	6.00	4.75	4.00	17.00	30	15	15	30
1	Avon/Mill Creek/PVCC	0645 - 2245	2.25	6.00	4.00	4.25	16.50	60	60	60	60
2	5th Street/Southwood	0615 - 1815	2.75	6.00	3.75	n/a	12.50	60	60	60	n/a
3	Belmont	0615 - 2315	2.75	6.00	3.25	5.50	17.50	30	30	30	60
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	0630 - 2245	2.50	6.00	3.50	5.00	17.00	60	60	60	60
5A	Georgetown/West Rio	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
5B	Hollymead	0615 - 2215	2.75	6.00	4.00	4.25	17.00	30	30	30	60
6	Ridge/Forrest Hills/UVA hospital	0645 - 2245	2.25	6.00	3.00	5.75	17.00	60	60	60	60
7A	US 29/Fashion Square via Hillside Dr	0615 - 2315	2.75	6.00	4.00	4.25	17.00	30	30	30	30
7B	US 29/Fashion Square via Seminole Tr	0630 - 1800	2.50	6.00	4.00	n/a	12.50	30	30	30	n/a
8	Preston/Barracks/Seminole Square	0630 - 1730	3.00	6.00	3.00	n/a	12.00	60	60	60	n/a
9	Charlottesville HS/Harris Rd	0645 - 1745	2.25	6.00	3.75	n/a	12.00	60	60	60	n/a
10	Meade/Pantops/Wilton Farms/MJH	0645 - 2245	2.50	6.00	4.00	4.75	17.25	60	60	60	60
12	Locust/Pantops/MJH	0615 - 1815	2.75	6.00	4.25	n/a	13.00	60	60	60	n/a
TOTALS											

Sunday

Route Number	Route Description	Start of First/ Last Trips	Operating Hours					Service Frequency			
			AM Peak Period	Midday Period	PM Peak Period	Eve. Period	Total Hours	AM Peak Period	Midday Period	PM Peak Period	Eve. Period
Trolley	Free Trolley	0800 - 1700	4.50	2.50	2.67	n/a	9.67	30	20	20	n/a
1	Avon/Mill Creek/PVCC	0845 - 1745	0.25	6.00	3.25	n/a	9.50	60	60	60	n/a
3	Belmont	0815 - 1815	0.75	6.00	3.75	n/a	10.50	60	60	60	n/a
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	0815 - 1815	0.75	6.00	4.25	n/a	11.00	60	60	60	n/a
5A	Georgetown/West Rio	0815 - 1815	0.75	6.00	4.25	n/a	11.00	60	60	60	n/a
5B	Hollymead	0815 - 1815	0.75	6.00	4.25	n/a	11.00	60	60	60	n/a
6	Ridge/Forrest Hills/UVA hospital	0815 - 1815	0.75	6.00	4.25	n/a	11.00	60	60	60	n/a
7A	US 29/Fashion Square via Hillside Dr	0745 - 1815	5.00	2.25	4.75	n/a	12.00	30	30	30	n/a
10	Meade/Pantops/Wilton Farms/MJH	0815 - 1815	0.75	6.00	4.25	n/a	11.00	60	60	60	n/a
TOTALS											

Long-Range Service Plan – Running Times and Route Distances

Weekdays

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	30	0	0%	30	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	25	5	17%	30	5.3
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	65	10	13%	75	65	10	13%	75	65	10	13%	75	60	0	0%	60	13.7
5A	Georgetown/West Rio	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	5.4
5B	Hollymead	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	6.2
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	40	20	33%	60	8.4
7A	US 29/Fashion Square via Hillside Dr	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	6.3
7B	US 29/Fashion Square via Seminole Tr	40	10	11%	90	40	10	11%	90	40	10	11%	90	n/a	n/a	n/a	n/a	6.6
8	Preston/Barracks/Seminole Square	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.9
9	Charlottesville HS/Harris Rd	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.5
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	55	5	8%	60	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
11	Barracks Road/Pantops Crosstown	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.4
17	MeadowCreek	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.4
101	US 29 Limited (UVA-Fashion Square)	40	5	11%	45	40	5	11%	45	40	5	11%	45	n/a	n/a	n/a	n/a	8.0
102	US 29 Limited (UVA-Fashion Square-Hollymead)	65	10	13%	75	65	10	13%	75	65	10	13%	75	n/a	n/a	n/a	n/a	18.2
TOTALS			126	12%	**1020**		115	11%	**1035**		115	11%	**1035**		63	13%	**480**	

Saturday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	40	5	11%	45	40	5	11%	45	27	3	10%	30	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	30	0	0%	30	9.9
2	5th Street/Southwood	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	8.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	25	5	17%	30	5.3
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	65	10	13%	75	65	10	13%	75	65	10	13%	75	60	0	0%	60	13.7
5A	Georgetown/West Rio	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	5.4
5B	Hollymead	25	10	17%	60	25	10	17%	60	25	10	17%	60	25	10	17%	60	6.2
6	Ridge/Forrest Hills/UVA hospital	40	5	11%	45	40	5	11%	45	40	5	11%	45	40	20	33%	60	8.4
7A	US 29/Fashion Square via Hillside Dr	40	10	11%	90	40	10	11%	90	40	10	11%	90	40	10	11%	90	6.3
7B	US 29/Fashion Square via Seminole Tr	40	10	11%	90	40	10	11%	90	40	10	11%	90	n/a	n/a	n/a	n/a	6.6
8	Preston/Barracks/Seminole Square	42	18	30%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	8.9
9	Charlottesville HS/Harris Rd	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	10.5
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	55	5	8%	60	11.9
12	Locust/Pantops/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.8
TOTALS			101	13%	**780**		90	11%	**795**		90	11%	**795**		63	13%	**480**	

Sunday

Route Number	Route Description	AM Peak Period Cycle Time				Midday Period Cycle Time				PM Peak Period Cycle Time				Evening Period Cycle Time				One-Way Distance (Miles)
		Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	Time (Min.)	Layover Time	% Layover	Cycle Time	
Trolley	Free Trolley	27	3	10%	30	35	5	13%	40	35	5	13%	40	n/a	n/a	n/a	n/a	5.7
1	Avon/Mill Creek/PVCC	30	0	0%	30	30	0	0%	30	30	0	0%	30	n/a	n/a	n/a	n/a	9.9
3	Belmont	25	5	17%	30	25	5	17%	30	25	5	17%	30	n/a	n/a	n/a	n/a	5.3
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	60	0	0%	60	60	0	0%	60	60	0	0%	60	n/a	n/a	n/a	n/a	13.7
5A	Georgetown/West Rio	25	10	17%	60	25	10	17%	60	25	10	17%	60	n/a	n/a	n/a	n/a	5.4
5B	Hollymead	25	10	17%	60	25	10	17%	60	25	10	17%	60	n/a	n/a	n/a	n/a	6.2
6	Ridge/Forrest Hills/UVA hospital	40	20	33%	60	40	20	33%	60	40	20	33%	60	n/a	n/a	n/a	n/a	8.4
7A	US 29/Fashion Square via Hillside Dr	27	6	10%	60	40	10	11%	90	40	10	11%	90	n/a	n/a	n/a	n/a	6.3
10	Meade/Pantops/Wilton Farms/MJH	55	5	8%	60	55	5	8%	60	55	5	8%	60	n/a	n/a	n/a	n/a	11.9
TOTALS			59	13%	**450**		65	13%	**490**		65	13%	**490**					

Long-Range Service Plan – Hours, Miles and Peak Bus Requirements

Weekdays

Route Number	Route Description	Average Weekday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	36.4	40.8	342.0	2.00	3.00	3.00	1.00	9.4	6:40 a.m. - 11:48 p.m.	100%	40.8	0%	0.0
1	Avon/Mill Creek/PVCC	8.0	8.0	158.4	0.50	0.50	0.50	0.50	19.8	6:45 a.m. - 11:15 p.m.	100%	8.0	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	6:15 a.m. - 6:45 p.m.	50%	3.3	50%	3.3
3	Belmont	12.9	15.5	164.3	1.00	1.00	1.00	0.50	12.7	6:15 a.m. - 11:45 p.m.	100%	15.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	24.5	27.6	315.1	2.50	1.25	2.50	1.00	12.9	6:30 a.m. - 11:45 p.m.	100%	27.6	0%	0.0
5A	Georgetown/West Rio	25.1	30.0	321.0	2.00	2.00	2.00	1.00	12.8	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
5B	Hollymead	25.1	30.0	369.0	2.00	2.00	2.00	1.00	14.7	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
6	Ridge/Forrest Hills/UVA hospital	15.3	18.8	193.2	1.50	0.75	1.50	1.00	12.6	6:45 a.m. - 11:45 p.m.	100%	18.8	0%	0.0
7A	US 29/Fashion Square via Hillside Dr	45.3	51.1	428.4	3.00	3.00	3.00	3.00	9.5	6:15 a.m. - 11:45 p.m.	100%	51.1	0%	0.0
7B	US 29/Fashion Square via Seminole Tr	33.4	37.5	330.0	3.00	3.00	3.00	0.00	9.9	6:30 a.m. - 7:00 p.m.	100%	37.5	0%	0.0
8	Preston/Barracks/Seminole Square	16.3	19.0	169.1	2.00	1.00	2.00	0.00	10.4	6:30 a.m. - 7:00 p.m.	100%	19.0	0%	0.0
9	Charlottesville HS/Harris Rd	11.0	12.0	126.0	1.00	1.00	1.00	0.00	11.5	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	16.6	18.0	214.2	1.00	1.00	1.00	1.00	12.9	6:30 a.m. - 11:45 p.m.	50%	9.0	50%	9.0
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
11	Barracks Road/Pantops Crosstown	17.4	19.0	216.6	2.00	1.00	2.00	0.00	12.4	6:30 a.m. - 7:00 p.m.	50%	9.5	50%	9.5
17	MeadowCreek	22.9	25.0	260.0	2.00	2.00	2.00	0.00	11.4	6:30 a.m. - 7:00 p.m.	50%	12.5	50%	12.5
101	US 29 Limited (UVA-Fashion Square)	16.6	18.8	200.0	1.50	1.50	1.50	0.00	12.0	6:30 a.m. - 7:15 p.m.	100%	18.8	0%	0.0
102	US 29 Limited (UVA-Fashion Square-Hollymead)	27.1	31.3	455.0	2.50	2.50	2.50	0.00	16.8	6:30 a.m. - 7:45 p.m.	50%	15.7	50%	15.7
TOTALS		**371.4**	**421.9**	**4531.4**	**31.00**	**28.00**	**32.00**	**10.00**	**12.2**		**72%**	**305.5**	**28%**	**116.4**

Saturday

Route Number	Route Description	Average Saturday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	34.6	38.8	319.2	1.00	3.00	3.00	1.00	9.2	6:40 a.m. - 11:48 p.m.	100%	38.8	0%	0.0
1	Avon/Mill Creek/PVCC	8.0	8.0	158.4	0.50	0.50	0.50	0.50	19.8	6:45 a.m. - 11:15 p.m.	100%	8.0	0%	0.0
2	5th Street/Southwood	5.5	6.5	115.7	0.50	0.50	0.50	0.00	21.0	7:00 a.m. - 6:30 p.m.	50%	3.3	50%	3.3
3	Belmont	12.9	15.5	164.3	1.00	1.00	1.00	0.50	12.7	6:15 a.m. - 11:45 p.m.	100%	15.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	19.1	21.3	246.6	1.25	1.25	1.25	1.00	12.9	6:30 a.m. - 11:45 p.m.	100%	21.3	0%	0.0
5A	Georgetown/West Rio	25.1	30.0	321.0	2.00	2.00	2.00	1.00	12.8	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
5B	Hollymead	25.1	30.0	369.0	2.00	2.00	2.00	1.00	14.7	6:15 a.m. - 11:15 p.m.	0%	0.0	100%	30.0
6	Ridge/Forrest Hills/UVA hospital	11.3	14.3	142.8	0.75	0.75	0.75	1.00	12.6	6:45 a.m. - 11:45 p.m.	100%	14.3	0%	0.0
7A	US 29/Fashion Square via Hillside Dr	45.3	51.1	428.4	3.00	3.00	3.00	3.00	9.5	6:15 a.m. - 11:45 p.m.	100%	51.1	0%	0.0
7B	US 29/Fashion Square via Seminole Tr	33.4	37.5	330.0	3.00	3.00	3.00	0.00	9.9	6:30 a.m. - 7:00 p.m.	100%	37.5	0%	0.0
8	Preston/Barracks/Seminole Square	10.4	12.0	106.8	1.00	1.00	1.00	0.00	10.3	6:30 a.m. - 6:30 p.m.	100%	12.0	0%	0.0
9	Charlottesville HS/Harris Rd	11.0	12.0	126.0	1.00	1.00	1.00	0.00	11.5	6:45 a.m. - 6:45 p.m.	100%	12.0	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	16.6	18.0	214.2	1.00	1.00	1.00	1.00	12.9	6:30 a.m. - 11:45 p.m.	50%	9.0	50%	9.0
12	Locust/Pantops/MJH	12.0	13.0	153.4	1.00	1.00	1.00	0.00	12.8	6:15 a.m. - 7:15 p.m.	50%	6.5	50%	6.5
TOTALS		**270.3**	**308.0**	**3195.8**	**19.00**	**21.00**	**21.00**	**10.00**			**74%**	**229.3**	**26%**	**78.8**

Sunday

Route Number	Route Description	Average Sunday			Bus Requirements				Avg. Speed	Approximate Hours of Operation	Jurisdictional Costs			
		In-Serv. Hours	Rev. Hrs.	Rev. Miles	AM Peak Period	Midday Period	PM Peak Period	Eve. Period			Charlottesville %	Charlottesville Hours	Albemarle %	Albemarle Hours
Trolley	Free Trolley	13.5	15.1	142.5	1.00	2.00	2.00	0.00	10.6	8:00 a.m. - 5:40 p.m.	100%	15.1	0%	0.0
1	Avon/Mill Creek/PVCC	4.5	4.5	89.1	0.00	0.50	0.50	0.00	19.8	8:45 a.m. - 6:15 p.m.	100%	4.5	0%	0.0
3	Belmont	4.6	5.5	58.3	0.50	0.50	0.50	0.00	12.7	8:15 a.m. - 6:45 p.m.	100%	5.5	0%	0.0
4	Cherry/UVA Hospital/Frys Spring/Barracks Rd	11.0	11.0	150.7	1.00	1.00	1.00	0.00	13.7	8:15 a.m. - 7:15 p.m.	100%	11.0	0%	0.0
5A	Georgetown/West Rio	9.6	11.5	123.1	1.00	1.00	1.00	0.00	12.8	8:15 a.m. - 7:15 p.m.	0%	0.0	100%	11.5
5B	Hollymead	9.6	11.5	141.5	1.00	1.00	1.00	0.00	14.7	8:15 a.m. - 7:15 p.m.	0%	0.0	100%	11.5
6	Ridge/Forrest Hills/UVA hospital	7.4	11.0	92.4	1.00	1.00	1.00	0.00	12.5	8:15 a.m. - 7:15 p.m.	100%	11.0	0%	0.0
7A	US 29/Fashion Square via Hillside Dr	27.7	31.1	302.4	2.00	3.00	3.00	0.00	10.9	7:45 a.m. - 7:45 p.m.	100%	31.1	0%	0.0
10	Meade/Pantops/Wilton Farms/MJH	10.1	11.0	130.9	1.00	1.00	1.00	0.00	13.0	8:15 a.m. - 7:15 p.m.	50%	5.5	50%	5.5
TOTALS		**98.0**	**112.2**	**1230.8**	**8.50**	**11.00**	**11.00**	**0.00**	**12.6**		**75%**	**83.7**	**25%**	**28.5**

Charlottesville Area Transit

Transit Development Plan

Technical Memorandum #9: Financial Plan

submitted by Connetics Transportation Group, Inc.

Connetics Transportation Group

May 2011

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APPENDIX A – PROPOSED SCHEDULE OF NEAR-TERM AND SHORT-RANGE SERVICE PLAN IMPROVEMENTS

APPENDIX B – PROPOSED SIX-YEAR SCHEDULE OF BUS REPLACEMENTS

1 Background and Introduction

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), is completing this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The TDP is undergoing extensive data collection and analysis, with intensive field investigation and team evaluation. The development of recommendations will be based on:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

The financial plan is the culmination of the TDP process, whereby the recommendations identified to meet the region's transportation needs are balanced against the funding realities of federal, state, and local sources. This technical memorandum funding requirements for the near-term, short-range and long-range phases, and describes the sources of funds anticipated to be available during the near-term and short-range phases of the TDP.

2 Service Requirements

In *Technical Memorandum 8 – Service Plan Recommendations*, service plans were developed for three planning horizons – near-term (1-3 years), short-range (4-6 years) and long-range (2035). The near-term plan, which is anticipated to be implemented over FYs 2012, 2013 and 2014, is virtually cost-neutral. There are no additional buses required to operate the near-term plan. Revenue hours are only increased by 0.1% while revenue miles are increased by 1.5%. The short-range plan, which is designed for implementation during FYs 2015, 2016 and 2017, is more aggressive with an increase of two peak buses. Revenue hours are increased by 14%. The final component of the service recommendations is the long-range plan. This plan increases the peak bus requirement to 35 vehicles (an increase of 8 peak buses over existing) and reflects a 45% increase in revenue hours over existing. The tables below depict the incremental increases in service requirements (Table 2-1) and peak vehicle requirements (Table 2-2) between the three planning horizons of the service plans. Peak vehicle requirements are identified by type of vehicle (29' and 35' buses, replica trolley buses and body-on-chassis buses).

Table 2-1
Projected Service Requirements

	Current	Near-Term (Yrs 1-3)	Short-Range (Yrs 4-6)	Long-Range (> 6 yrs)
Annual Rev. Bus-Hours	89,110	89,210	101,440	129,210
% Change from Current	n/a	0.1%	14%	45%
Annual Rev. Bus-Miles	939,900	954,300	1,051,400	1,383,100
% Change from Current	n/a	1.5%	12%	47%

Table 2-2
Projected Peak Vehicle Requirements

	Current	Near-Term	Short-Range	Long-Range
29' & 35' Buses				
Peak Requirement	19	19	21	29
Total Fleet	27	27	27	35
Replica Trolley Buses				
Peak Requirement	3	3	3	3
Total Fleet	5	5	5	4
Body-on-Chassis Buses				
Peak Requirement	3	3	3	3
Total Fleet	4	4	4	4
TOTAL PEAK REQUIREMENT	25	25	27	35
TOTAL FLEET	36	36	36	43

Service improvements described in *Technical Memorandum 8*, and the service requirements presented in the above tables reflect all service proposed improvements for each time period (i.e., near-term, short-range and long-range). An annual schedule of specific service improvements has since been determined for the near-term and short-range time periods (i.e., the TDP six-year time period), and is presented in Appendix A of this Technical Memorandum.

3 Capital Requirements

As mentioned in *Technical Memorandum 8*, CAT will require a number of capital investments in order to maintain effective service delivery and expand into the TDP's service recommendations.

Transfer Facilities

As the CAT system grows, the need for safe, convenient locations to accommodate passenger transfers also increases. This need is particularly intensified as less emphasis is placed on the Downtown Transit Station (DTS) and more connections are made available in secondary locations such as Barracks Road Shopping Center and Fashion Square Mall. Based on findings presented earlier, Barracks Road Shopping Center is in the most critical need of facility investment as the Downtown Transit Station currently has adequate capacity.

Bus Stops and Amenities

Throughout the CAT system, bus stops are clearly marked with street-side signage, indicating the route that serves that location. Bus stops with higher passenger volumes also feature shelters, benches, static bus schedule displays and/or electronic bus finders. CAT has been much more progressive than similarly-sized properties and is encouraged to maintain these amenities as the system grows.

Buses

CAT presently owns a fleet of 36 revenue vehicles and 8 non-revenue vehicles. The revenue vehicle fleet consists of seventeen 35-foot buses, eight 29-foot buses, two 29-foot hybrid buses, five replica trolleys and four body-on-chassis buses. The body-on-chassis buses are used to operate evening service on routes whose peak loads do not necessitate a full-size transit bus.

As CAT grows, new vehicles will need to be procured to accommodate expansion as well as replacements. CAT has recently committed to diesel-electric hybrid technology in an effort to improve operating efficiency and demonstrate environmental leadership. In the near-term plan, there is no increase in peak vehicles. However, the short-range service plan increases the peak requirement by two buses and the long-range service plan increases the peak requirement by another eight. Table 2-2 (in the prior section) presented projected bus needs through each time horizon of the service plan. Note that this table does not include bus replacement requirements.

Non-Revenue Vehicles

CAT has eight non-revenue vehicles to support transit service. This TDP assumes CAT's non-revenue vehicle requirements remain unchanged. However, vehicle replacements will be required as non-revenue vehicles reach the end of their scheduled useful life.

US 29 Corridor Improvements

The long-range plan of this TDP includes proposals for significant transit service improvements in the US 29 corridor. Limited stop service is proposed along this corridor. Bus stop amenities will be required at these stop locations, and could include enhanced passenger waiting facilities and real-time schedule information for passengers. It may be appropriate to upgrade some of the limited stop locations to suburban transit centers (e.g., the Fashion Square Mall stop). Park-and-ride lots are proposed at US 29 stop locations where feasible (in particular at the north end stops). Improvements could also include measures such as bus queue jumper lanes at signalized intersections, use of bus-only lanes at select locations and bus access improvements to and from limited stops. Specific improvements for the US 29 corridor will need to be determined as the City of Charlottesville and Albemarle County advance these long-range transit service proposals for the US 29 corridor.

4 Costs

Operating Costs

For the purpose of this technical memorandum, operating costs have been calculated using a rate of $67.42 per revenue hour (inclusive of fuel costs). This rate was provided by CAT management and reflects estimated cost per hour to provide service in FY11. As shown in Tables 2-1, CAT's FY 2012 budget reflects just over $6 million annually to operate. When fully implemented, the near-term plan costs less than $6,300 over the existing service level, exclusive of inflation. The short-range plan requires an additional $831,000 in annual operating costs over the near-term plan. The long-range plan is even more robust and requires $2.7 million over existing.

Table 4-1

TDP Operating Cost Estimates (FY 2011 Dollars)

Service Plan Scenario	Additional O&M Cost (Over Existing)
Near-Term Plan Cost	$6,300
Short-Range Plan Cost	$831,000
Long-Range Plan Cost	$2,704,200

Capital Costs

Transfer Facilities - The most recent estimated cost for improvements to Barracks Road Shopping Center is $1.7 million. It is important to note that this transfer facility is critical to the extension of Route 4 as the current facility does not have the capacity to house the existing service adequately.

Bus Stops and Amenities - CAT typically programs $50,000 annually in the CIP for bus stop improvements. This amount is assumed to continue throughout the course of this TDP at an amount that keeps pace with inflation.

Buses – As previously noted, CAT employs a mix of 29-foot hybrid buses, 35-foot diesel buses, replica trolleys and body-on-chassis buses. This fleet mix is expected to be maintained through all three time horizons of the TDP. Table 4-1 identifies the per-unit costs for each vehicle type in FY11 dollars. As noted earlier in Table 2-2, no expansion vehicles are required during the TDP's six-year period. Seven (7) additional fleet buses are required for proposed expansion in the long-range plan.

Replacement vehicle requirements were determined for just the six-year time period (i.e., the near-term and short-range plan). Appendix B presents a fleet replacement schedule for the six-year period. Note that this table reflects years when buses should be available for revenue service. The procurement of large buses (i.e., the 29' and 35' buses) requires committed

funding in the year preceding the delivery date. A total of 23 buses are needed for bus replacements over this time period. Costs for replacement buses were determined for just the six-year period, and estimated to be $6.31 million in 2011 dollars.

Table 5-1
Vehicle Purchase Unit Costs (FY11$)

Vehicle Type	Unit Cost
29' Hybrid Bus	$610,000
35' Diesel Bus	$450,000
35' Replica Trolley	$505,000
Body-on-Chassis (Cutaway) Bus	$105,000

Table 5-2
Vehicle Purchase Requirements for TDP Six-Year Period (FY11$)

Time Period	29' Hybrid Bus	35' Diesel Bus	35' Replica Trolley	Body-on-Chassis Bus	Total
Near-Term (yrs 1-3)	6	-	4	2	12
Short-Range (yrs 4-6)	-	-	-	4	4
Total Vehicles	**6**	**0**	**4**	**6**	**16**
Total Cost	**$3,660,000**	**$0**	**$2,020,000**	**$630,000**	**$6,310,000**

Non-Revenue Vehicles – As noted earlier, CAT's fleet includes eight non-revenue vehicles to support transit service. No fleet expansion is proposed in this TDP. However, vehicles will need to be replaced as they end their scheduled useful life. Replacement requirements were determined for just the TDP six-year period (i.e., the near-term and short-range plan). All eight vehicles will require replacement during the six-year period, at an estimated cost of $420,000 (2011 dollars).

US 29 Corridor Improvements – Service improvements proposed for the US 29 corridor are in the long-range plan's time period. Specific capital improvements for this corridor still need to be determined as service plans for this corridor are further defined. Therefore, cost estimates have not been identified at this time.

5 Financial Plan

The financial plan is a principal objective of the TDP. It is in this chapter that an agency demonstrates its ability to provide a sustainable level of transit service over the TDP time period, including the rehabilitation and replacement of capital assets. A financial plan has been developed for just the near-term and short-range time periods (i.e., the six-year TDP time period). This chapter identifies potential funding sources, annual operating and maintenance costs, funding requirements and funding sources for annual operating and maintenance costs, and funding requirements and funding sources for capital assets.

Existing Charlottesville Area Transit Costs and Funding Sources

CAT's FY 2012 budget is $6.018 million. This reflects a $229,000 increase over FY 11's budget. Revenues for CAT presently come from the following sources:

Table 5-1
CAT FY 20120 Projected Revenue Sources

Revenue Source	FY 2012 Budget Amount	% of Total
City of Charlottesville	$1,923,108	32.0%
Federal Operating Assistance (5307)	$1,513,169	25.1%
State Mass Transit Trust Fund	$825,612	13.7%
Albemarle County	$648,004	10.8%
Passenger Fares	$440,000	7.3%
Job Access (JARC)	$335,611	5.6%
UVA Fare-Free ID Access	$145,000	2.4%
UVA Free Trolley Assistance	$60,000	1.0%
Advertising	$75,000	1.2%
Rent	$52,908	0.9%
TOTAL	**$6,018,412**	**100%**

As noted above, the largest contributor to CAT's budget is the City of Charlottesville. CAT receives over 30% of its budget from federal programs (5307 and JARC). The State Mass Transit Trust Fund accounts for 13.7% of the projected budget. Revenues collected by the Commonwealth for the State Mass Transit Fund are distributed as follows:

- 74.25% towards operating assistance
- 25% to capital assistance
- 0.75% to special projects

In FY 2011, the Commonwealth was able to fund 35.7% of eligible operating expenses state-wide. As noted above, about $826,000 is to be distributed to the City of Charlottesville for

operating assistance. Passenger fares and UVA funds combined (for both the Fare Free ID Access program and Free Trolley assistance) account for only 10% of projected revenues.

Anticipated Future Revenue Sources

This TDP assumes funds presently used for CAT operations will continue to be available during the TDP's six-year time period. Specific funding assumptions regarding each revenue source are as follows:

Federal Operating Assistance (5307). The Federal Transit Administration's (FTA's) 5307 program Section 5307 is a formula grant program for urbanized areas providing capital, operating, and planning assistance for mass transportation. This program was initiated by the Surface Transportation Act of 1982 and became FTA's primary transit assistance program in FY 1984. Funds are apportioned to urbanized areas utilizing a formula based on population, population density, and other factors associated with transit service and ridership. Section 5307 is funded from both General Revenues and Trust Funds. This TDP assumes 5307 funds for CAT will grow at a rate consistent with inflation (assumed to be 3% per year in this TDP).

State Mass Transit Trust Fund. Information presented in the State's SYIP indicates that funds collected for the State's Mass Transit Trust Fund for Operating Assistance are expected to grow by the following percentages over the TDP's six-year time period:

- FY 2012 – 3.60%
- FY 2013 – 4.03%
- FY 2014 – 4.11%
- FY 2015 – 4.26%
- FY 2016 – 3.18%

Projections for FY 2017 are not yet available, but have been assumed at 3.85% for this TDP (the average percent increase between FY 2012 and FY 2016). It is important to note that this reflects projected percent increases in ***total*** revenues in the Mass Transit Trust Fund. Funds available for specific transit agencies will vary, for funds are distributed by the State on a formula basis. For purposes of this TDP, it is assumed funds available for CAT will increase by these percentages.

Farebox Revenues. Fares for CAT are presently $0.75 for the general public, ages 6 to 64. There is a reduced fare for those over 65 or disabled, and children 5 and under ride free with an adult. Passes are also available that provide discounts (Day Pass and Monthly Pass). Fares are assumed to remain unchanged throughout the TDP time period. Ridership productivity (riders per revenue bus-hour of service) is assumed to increase slightly as a result of service

recommendations presented in this TDP, thus resulting in modest fare revenue increases that are tied to revenue service-hours.

Job Access Reverse Commute (JARC) Funds (5316). JARC funds from FTA's 5316 program are currently used to help fund CAT's evening service. JARC funding is assumed to remain in place for the TDP's six-year period at current levels.

Albemarle County Funds. Albemarle County presently provides funding for Routes 5, 10, one half of Route 2B, and Route 24. TDP service plans assume that for the first three years of the TDP, Albemarle County funds 100% of Route 5, and 50% of Routes 2, 10A, 10B and 24, and for the second three-year period, Albemarle County funds 100% of Routes 5A and 5B, and 50% of Routes 2, 10A and 10B. Service hours attributable to Albemarle County routes remain fairly consistent on a percentage basis throughout the TDP six-year period, with Albemarle County routes accounting for 23-24% of CAT's weekday service hours, and 25% of CAT's Saturday service hours. Therefore, it has been assumed that Albemarle County funding grows only at a rate consistent with inflation (assumed to be 3%/year in this TDP).

UVA Funding. CAT receives funding from UVA from two sources. The Fare-FREE Access program allows UVA students, staff and faculty to ride free with a valid UVA photo ID. UVA provides CAT funding in exchange for those trips. The amount received from UVA is negotiated, and is presently $145,000. It is assumed that this amount will increase only a rate consistent with inflation.

The second source of UVA funding is for the Free Trolley. The amount of funds received from UVA is negotiated, and is presently $60,000. It is assumed this amount will also increase at a rate consistent with inflation.

It is important to note that UVA funding levels assumed in this TDP are conservative. Surveys taken as part of this TDP effort indicate that UVA ridership on CAT routes is a much higher percentage than UVA's financial contribution. Seventy one percent (71%) of riders on the Free Trolley indicated they were affiliated with UVA. Thirty seven percent (37%) of riders on all other CAT routes indicated they were affiliated with UVA. These percentages are consistent with findings from prior ridership surveys. The Free Trolley presently costs about $1 million annually to operate. Thus, funding provided by UVA for the Free Trolley (6%) does not match with the existing split of UVA/non-UVA riders (71%/29%). Further, the funding split between UVA's FREE ID Access program and non-UVA passenger fares (25%/75%) does not match the ridership split for CAT's other routes (37%/63%). This imbalance in funding vs. ridership usage was previously noted in the 2005 Charlottesville Transit Improvement Study (2005). Thus, although this TDP's financial plan assumes UVA funding to remain at current levels (with growth

only associated with inflation), consideration should be given to restructuring both UVA funding arrangements in a manner that is more in-line with usage.

Other Revenues. Other revenues come from advertising and rent (rent revenue is collected from the Charlottesville Albemarle Convention and Visitors Bureau and for a café at the Downtown Transit Station). Advertising revenues are assumed to increase at the rate of inflation. Rent revenues are assumed to remain unchanged, per the current five-year rental agreement.

City of Charlottesville Funding. This TDP's financial plan assumes the City of Charlottesville is responsible for covering all other transit operations expenses not covered by the revenue sources described above.

Cash Flow Analysis for Operations/Maintenance Costs

Table 5-2 presents a cash flow analysis of O&M costs and likely revenues for CAT. Key assumptions in this table are as follows:

- Costs identified for FY 2012 reflect the CAT 2012 operating budget.
- Costs for new / modified transit services reflect costs previously presented in this Technical Memorandum and reflect the annual schedule of service improvements provided in Appendix A.
- An inflation factor of 3 percent/year has been assumed in the cost estimates.
- Funding levels from existing revenue sources are based on assumptions described above.

Funding required from the City of Charlottesville is anticipated to increase from $1.923 million in FY 2012 to $3.253 million in FY 2017. Much of the increase begins in FY 2015, when significant service expansion is proposed. As noted above, financial assumptions used in this TDP assume no fare increase, and no substantive increase in funding from UVA or Albemarle County (besides inflation). City-required funds could be reduced through increased funding from any of these sources.

Table 5-2
O&M Costs and Potential Revenue Sources
(Year of Expenditure Dollars)

OPERATIONS Service Costs/Funding Category	Budget FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
Projected Operating & Maintenance Costs						
Prior Year O&M Costs, Inflated	$6,018,412	$6,199,000	$6,386,200	$6,577,800	$7,078,900	$7,695,300
O&M Costs for Service Changes, Inflated	n/a	$1,200	$0	$294,900	$392,300	$266,900
Total O&M Costs	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
Change from Prior Year	$228,889	$181,788	$186,000	$486,500	$598,500	$491,000
Anticipated Non-City Funding Sources						
Federal Operating Assistance (5307)	$1,513,169	$1,558,600	$1,605,400	$1,653,600	$1,703,200	$1,754,300
State Operating Assistance	$825,612	$850,400	$875,900	$902,200	$929,300	$957,200
Albemarle County	$648,004	$674,100	$701,800	$731,700	$755,000	$784,000
Fare Revenues	$440,000	$445,000	$445,000	$464,600	$489,600	$506,600
Job Access Reverse Commute (JARC)	$335,611	$335,600	$335,600	$335,600	$335,600	$335,600
UVA - Fare-FREE ID Access	$145,000	$149,400	$153,900	$158,500	$163,300	$168,200
Advertising	$75,000	$77,300	$79,600	$82,000	$84,500	$87,000
UVA - Free Trolley Assistance	$60,000	$61,800	$63,700	$65,600	$67,600	$69,600
Rent	$52,908	$52,900	$52,900	$52,900	$52,900	$52,900
Total Non-City Funds	**$4,095,304**	**$4,205,100**	**$4,313,800**	**$4,446,700**	**$4,581,000**	**$4,715,400**
Percent Change from Prior Year		2.7%	2.6%	3.1%	3.0%	2.9%
City of Charlottesville Funding	**$1,923,108**	**$1,995,100**	**$2,072,400**	**$2,426,000**	**$2,890,200**	**$3,246,800**
Percent Change from Prior Year		3.7%	3.9%	17.1%	19.1%	12.3%
TOTAL REVENUE	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
		3.0%	3.0%	7.6%	8.7%	6.6%

Capital Costs and Revenues

Table 5-2 presents estimated capital costs and potential funding sources for CAT for the TDP six-year period. Key assumptions in this table are as follows:

- Costs for vehicles, bus stop improvements and the Barracks Road Transit Station were noted in the prior section of this Technical Memorandum.
- Funding needs for large buses (29' and 35') are reflected in the year preceding the scheduled year for revenue service.
- An inflation factor of 3 percent/year has been assumed in the cost estimates.
- Capital / vehicle revenue sources assume 80% funding from federal programs (5307/5309), 16% funding from City funds and 4% from State funds (State funds typically vary from 4 to 16%. For purposes of this TDP, 4% has been assumed)

As noted in the table below, local funding requirements vary each year, with the largest amount required in FY 2014, when the Barracks Road Transit Station is proposed.

Table 7-3
Capital Expenditures and Potential Revenue Sources
(Year of Expenditure Dollars)

CAPITAL Capital Costs/Funding Category	Projected FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
EXPENDITURES						
Bus & Non-Revenue Vehicle Purchases	$2,405,000	$2,589,000	$1,218,000	$365,000	$254,000	$203,000
Bus Stop Improvements	$0	$57,900	$60,800	$63,800	$67,000	$70,400
Barracks Road Transit Station	$0	$0	$1,700,000	$0	$0	$0
Total Expenditures	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**
FUNDING						
Anticipated Funding Sources						
Federal Grants (80%)	$1,924,000	$2,117,520	$2,383,040	$343,040	$256,800	$218,720
Local Funds (16%)	$384,800	$423,504	$476,608	$68,608	$51,360	$43,744
State Capital Assistance (4%)	$96,200	$105,876	$119,152	$17,152	$12,840	$10,936
Total Funding	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**

APPENDIX A
PROPOSED SCHEDULE OF
NEAR-TERM AND SHORT-RANGE SERVICE PLAN IMPROVEMENTS

FY 2012 Transit Service Improvements

- Renumber Route 2B to Route 2 and modify route to provide bi-directional service along the Albemarle County segments of the service;
- Renumber Route 1B to Route 1;
- Create new Route 10 by combining streamlined segments of Route 1A with northernmost segments of Route 10;
- Create new Route 12 by combining streamlined segments of Route 2A with the southernmost segments of Route 10;
- Decrease evening frequency on Route 21 from 30 minutes to 60 minutes to better match customer demand;
- Apply routing modifications to Evening Route 24 to match those recommended to Route 10 (i.e., service to the new Martha Jefferson Hospital campus); and
- Modify Route 5 to provide bi-directional travel along Rio Road.

FY 2013 Transit Service Improvements

- Decrease evening and Saturday morning frequency on the Free Trolley from 15 minutes to 30 minutes to better match customer demand;
- Adjust Route 7's morning running times by adding one vehicle to improve on-time performance plus adjust inbound routing in downtown to mimic the Free Trolley;
- Change Route 1's approach to PVCC via Avon Street, Mill Creek Drive and VA 20;
- Modify Route 3 to assume productive stop segments along Monticello Avenue currently served by Route 1B;
- Streamline Route 4 to provide bi-directional corridor service along Cherry Avenue;
- Modify Route 6 to assume the Forrest Hills neighborhood currently served by Route 4, new service to Brookwood and bi-directional service throughout the core of the route;
- Modify Route 9's inbound routing to maintain bi-directional service along 10th Street; and
- Apply similar routing modifications to Evening Routes 21 and 23 to match those recommended to Routes 3 and 1, respectively.

FY 2014 Transit Service Improvements

- No service modifications are proposed for FY 2014.

FY 2015 Transit Service Improvements

- Provide service to Hollymead with new Route 5B; and
- Extend Route 9 to serve the new McIntire Park YMCA.

FY 2016 Transit Service Improvements

- Improve midday frequency on Route 3 from 60 minutes to 30 minutes, Monday-Saturday;
- Provide new connectivity between South Charlottesville, UVA and Barracks Road Shopping Center via Route 4; and

- Simplify night service be eliminating special route nomenclature, instead offering night service on Routes 1, 3, 4, 6 and 10 in addition to existing Routes 5, 7 and the Free Trolley.

FY 2017 Transit Service Improvements

- Provide service to the new Hillsdale Drive extension by splitting the existing Route 7 into two branches – Route 7A and 7B; and
- Provide service to the new Albemarle Place development via Route 8.

APPENDIX B
PROPOSED SIX-YEAR SCHEDULE OF BUS REPLACEMENTS

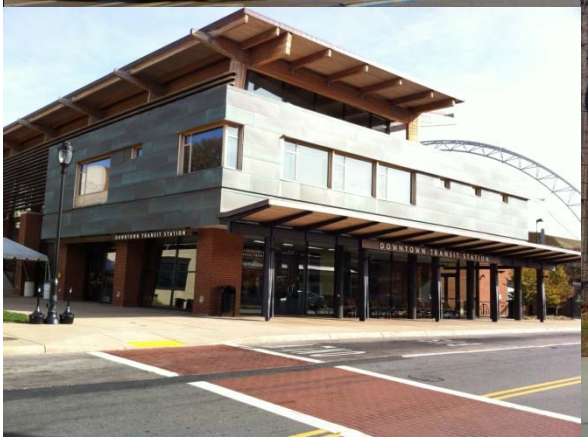
Transit Fleet Replacement and Expansion Schedule

Year	Make	Size (in Feet)	Existing/Future Bus #'s	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Replacement Notes
29 AND 35-FOOT BUSES (Diesel & Hybrid)											
1998	New Flyer	35	821,822,824,827	4	-	-	-	-	-	-	
2001	Chance Opus	29	843,845,846,842,844,847	6	3	1		-	-	-	
2001	New Flyer	35	840,841	2	2	2	-	-	-	-	
2004	Chance Opus	29	849	1	1	1	1	-	-	-	
2008	Gillig	29	200	1	1	1	1	1	1	1	
2008	Gillig	35	100,101,102,103,105,106,107	7	7	7	7	7	7	7	
2010	Gillig	35	108,109,110,111	4	4	4	4	4	4	4	
2011	Gillig - Hybrid	29	201,202	2	2	2	2	2	2	2	
2012	Hybrid Bus	29	203,204,205,206		4	4	4	4	4	4	Replace 821, 822, 824, 827
2012	Hybrid Bus	29	207,208,209	-	3	3	3	3	3	3	Replace 843, 845, 846
2013	Hybrid Bus	29	210,211	-	-	2	2	2	2	2	Replace 842, 844
2014	Hybrid Bus	29	212, 213, 214	-	-	-	3	3	3	3	Replace 840, 841, 847
2015	Diesel Bus	29	215					1	1	1	Replace 849
Total Sub-Fleet				**27**	**27**	**27**	**27**	**27**	**27**	**27**	
	29 foot buses			*10*	*11*	*12*	*13*	*16*	*16*	*16*	
	35 foot buses			*17*	*13*	*13*	*11*	*12*	*12*	*12*	
Peak Requirement for Standard Buses				**19**	**19**	**19**	**19**	**20**	**21**	**21**	
Spares for Standard Buses				**8**	**8**	**8**	**8**	**7**	**6**	**6**	
Standard Bus Spare Ratio %age				**42%**	**42%**	**42%**	**42%**	**35%**	**29%**	**29%**	
REPLICA TROLLEY BUSES (Diesel)											
2000	Chance Trolley	30	830, 831	2	2	-	-	-	-	-	
2002	Chance Trolley	30	848	1	1	1	-	-	-	-	
2003	Chance Trolley	30	833	1	1	1	1	-	-	-	
2009	Opus Trolley	30	400	1	1	1	1	1	1	1	
2013	Trolley	35	401, 402	-	-	2	2	2	2	2	Replace 830, 831
2014	Trolley	35	403	-	-	-	1	1	1	1	Replace 848
2015	Trolley	35	404	-	-	-	-	1	1	1	Replace 833
Total Sub-Fleet				**5**	**5**	**5**	**5**	**5**	**5**	**5**	
Peak Requirement for Trolley Buses				**3**	**3**	**3**	**3**	**3**	**3**	**3**	
Spares for Trolley Buses				**2**	**2**	**2**	**2**	**2**	**2**	**2**	
Trolley Bus Spare Ratio %age				**67%**	**67%**	**67%**	**67%**	**67%**	**67%**	**67%**	

Transit Fleet Replacement and Expansion Schedule

Year	Make	Size (in Feet)	Existing/Future Bus #'s	FY 2011 (current)	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Replacement Notes
BODY-ON-CHASSIS (Diesel)											
2007	Startrans	25	304	1	-	-	-	-	-	-	
2008	Startrans	25	305	1	1	-	-	-	-	-	
2011	Startrans	25	306, 307	2	2	2	2	-	-	-	Replace 302, 303
2012	Body-on-Chassis	25	308	-	1	1	1	1	-	-	Replace 304
2013	Body-on-Chassis	25	309	-	-	1	1	1	1	-	Replace 305
2015	Body-on-Chassis	25	310, 311	-	-	-	-	2	2	2	Replace 306,307
2016	Body-on-Chassis	25	312	-	-	-	-	-	1	1	Replace 308
2017	Body-on-Chassis	25	313	-	-	-	-	-	-	1	Replace 309
Total Sub-Fleet				**4**	**4**	**4**	**4**	**4**	**4**	**4**	
Peak Requirement for Small Buses				**3**	**3**	**3**	**3**	**3**	**3**	**3**	
Spares for Small Buses				**1**	**1**	**1**	**1**	**1**	**1**	**1**	
Small Bus Spare Ratio %age				**33%**	**33%**	**33%**	**33%**	**33%**	**33%**	**33%**	
TOTALS											
Total Fleet				**36**	**36**	**36**	**36**	**36**	**36**	**36**	
Peak Requirement				**25**	**25**	**25**	**25**	**26**	**27**	**27**	
Spare Vehicles				**11**	**11**	**11**	**11**	**10**	**9**	**9**	
Spare Ratio %age				**44%**	**44%**	**44%**	**44%**	**38%**	**33%**	**33%**	

Charlottesville Area Transit
TRANSIT DEVELOPMENT PLAN:
FISCAL YEARS 2012-2017
EXECUTIVE SUMMARY



May 2011

(Proposed Final)

Prepared by:

CTG Connetics Transportation Group

Under Sub-Contract to:

ATKINS

Under Contract to:

DRPT
Virginia Department of Rail and Public Transportation

1.0 TDP PROCESS

Connetics Transportation Group (CTG), in cooperation with Charlottesville Area Transit (CAT), and under contract to the Virginia Department of Rail and Public Transportation (DRPT), has completed this Transit Development Plan (TDP) for fiscal years 2012-2017. The core of the TDP is the Near-Term (FY 2012-FY 2014) and the Short-Range (FY 2015-FY 2017) which meets DRPT requirements to identify service and facility needs for the next six years. At the request of the City of Charlottesville, the TDP also provides a more extensive evaluation of existing service characteristics and service/facility needs than is required to meet DRPT requirements. In addition, Long-Range (through 2035) service recommendations are included in the TDP.

The near-term and short-range plans that are presented in this TDP are designed to improve service efficiency and delivery, apply resources where they are most needed, and modernize the route network based upon current and projected conditions within the service area. Both of these plans have been used to identify and program state-level funding needs during the 2012-2017 timeframe. The long-range plan element (2035) of this TDP identifies service improvement recommendations that connect the TDP's six-year service plans with the Thomas Jefferson Planning District Commission's (TJPDC) Long-Range Regional Transportation Plan (LRTP) process. With all three plans, this TDP provides direction in terms of service expansion, equipment requirements, and facility needs.

Preparation of the CAT TDP included the following major work tasks:

- A field survey of all routes including the trailing of bus trips;
- An on-board survey effort conducted on all CAT routes, focusing on passenger satisfaction, origin-destination pairings, trip purpose and basic demographic information;
- Monthly and daily route-level ridership analysis using CAT's GFI farebox data;
- Route-level, trip-level and stop-level ridership data based on a full system ridecheck;
- Detailed analysis for operating profile data, assessment of development patterns and trends, review of previous planning efforts and current operating policies, and consideration of local service requests; and
- Interviews and work sessions with CAT management and line personnel, community stakeholders and partners as well as input from riders through public meetings.

A series of Technical Memorandums have been completed to document each task in the CAT TDP process. Those Technical Memorandums are:

- ✔ Tech Memo #1: Documentation of CAT Staff Input
- ✔ Tech Memo #2: Documentation of Stakeholder Input and Public Outreach
- ✔ Tech Memo #3: Ridecheck Survey Methodology and Results
- ✔ Tech Memo #4: On-Board Survey Methodology and Results
- ✔ Tech Memo #5: Evaluation of Existing Service and Route Profiles
- ✔ Tech Memo #6: Peer Agency Review
- ✔ Tech Memo #7: Latent Demand Analysis
- ✔ Tech Memo #8: Service Plan Recommendations
- ✔ Tech Memo #9: TDP Financial Requirements

This document provides a summary of findings and recommendations that are presented in the Charlottesville Area Transit TDP.

2.0 EXISTING CAT SERVICE CHARACTERISTICS

Charlottesville Area Transit (CAT) provides fixed-route buses in the City of Charlottesville and portions of Albemarle County (Figure 2-1). The Central Grounds of the University of Virginia are served by CAT's FREE Trolley. CAT provides daytime service Monday through Saturday, 6:15 a.m. to 6:45 p.m. Night time buses operate on seven routes from 6:45 p.m. to 11:45 p.m. Customer Service is provided at the Downtown Transit Station, 615 East Water Street seven days a week. The maximum span of service is:

- Weekdays and Saturdays – 6:15 a.m. to 6:45 p.m.
- Sundays – 7:45 a.m. to 5:45 p.m.

It is important to note that not all routes operate during the full span of service.

Year 2007 population and employment estimates from the Thomas Jefferson Planning District Commission (TJPDC) were utilized to estimate the number of residents and employees located within one-quarter mile of a CAT bus route. Estimates are as follows:

Weekday and Saturday Service

- Population – 77,600
- Employment – 55,200

Weekday and Saturday Evening Service

- Population – 60,400
- Employment – 52,700

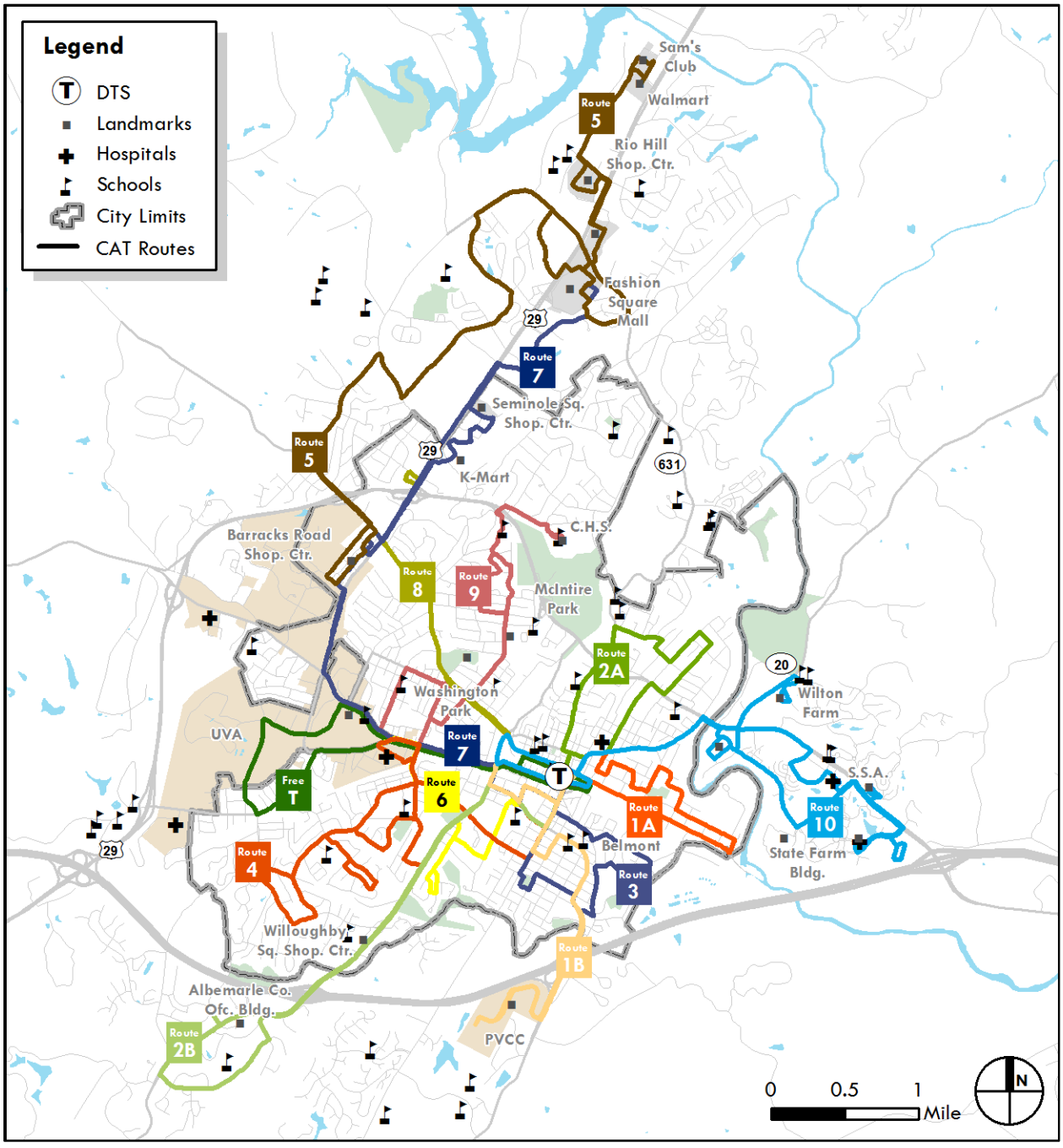
Sunday Service

- Population – 35,700
- Employment – 42,900

Service frequencies vary on CAT routes depending on the route, time of day and service scenario (i.e., full vs. reduced schedule). Route service frequencies are on "clock" headways, with either 15, 30 or 60-minute frequencies on weekdays and Saturdays. Estimated annual service statistics for CAT based on typical weekday, Saturday and Sunday service plans are as follows:

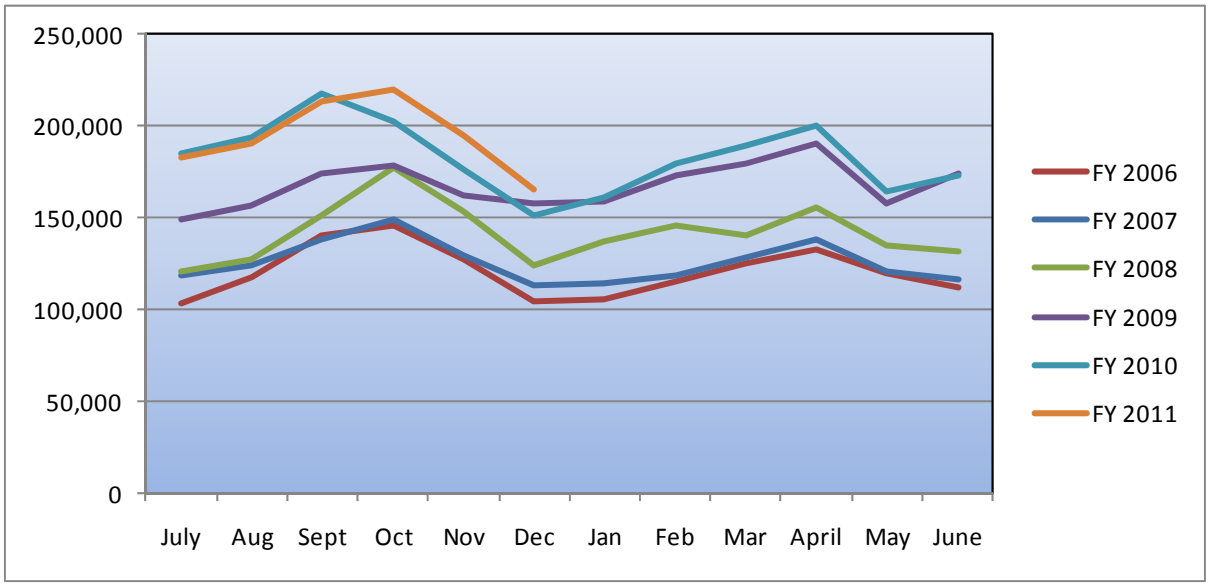
- Maximum weekday buses in operation – 25
- Maximum Saturday buses in operation – 22
- Maximum Sunday buses in operation – 4
- Annual revenue bus-hours of service – 88,500
- Annual revenue bus-miles of service – 933,300

Figure 2-1
Charlottesville Area Transit
System Map



Monthly ridership reports from Charlottesville Area Transit were graphed to determine ridership trends since FY 2006, and are presented in Figure 2-2.

Figure 2-2
System Monthly Ridership (FY 2006 through FY 2010)



Annual fixed route ridership averaged 1.45 million in FY 2006 and has grown to almost 2.2 million in FY 2010 – a 51 percent increase. As shown in the above graph, October usually has the highest ridership and December typically has the lowest monthly ridership in each fiscal year. For this current fiscal year (FY 2011) ridership for July through September has tracked closely with FY 2010 ridership during the same months. FY 2011 October, November and December ridership, however, was significantly higher than FY 2010 ridership.

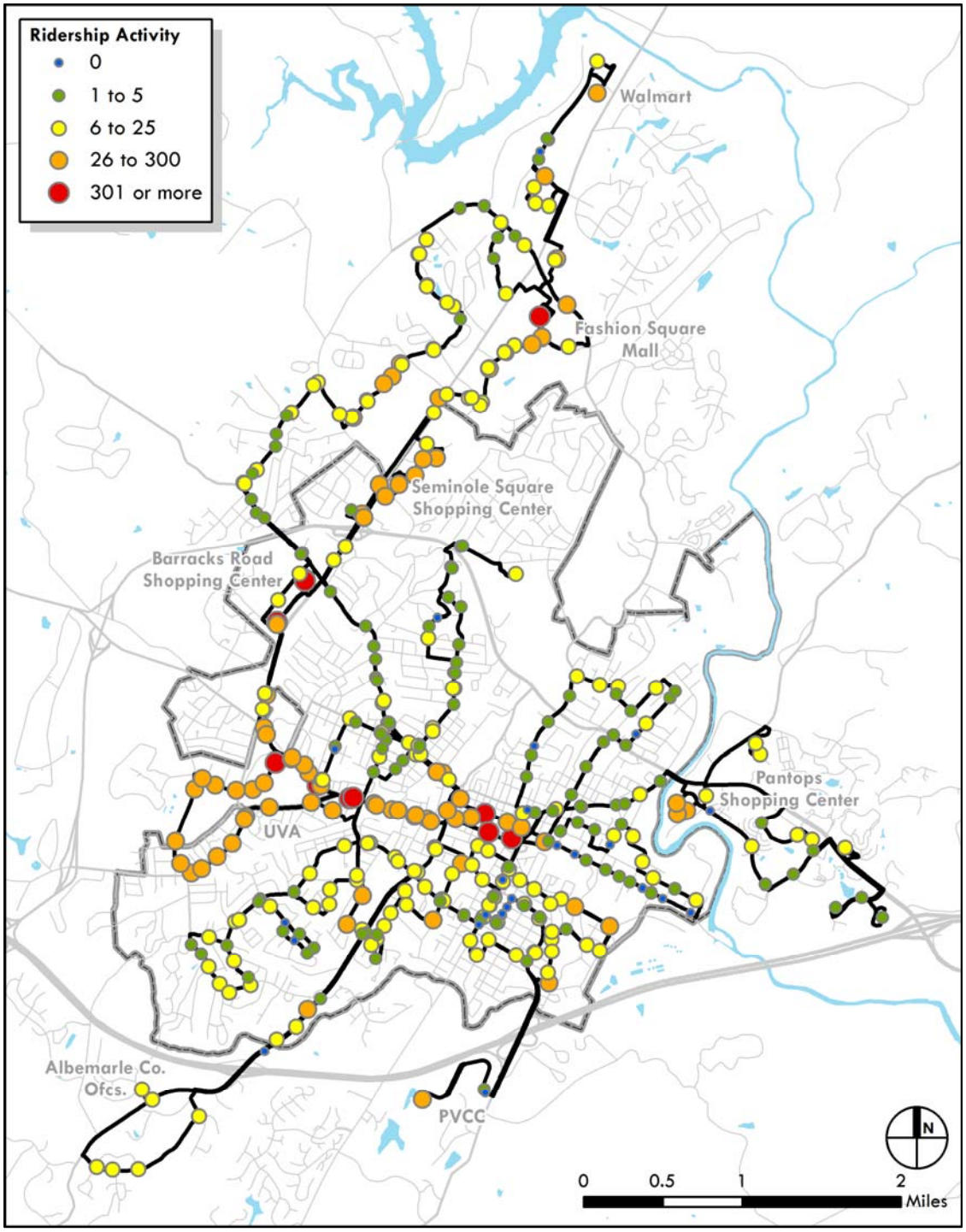
Ridership data from this project's ridecheck survey (conducted October 30 through November 6, 2010) was used to determine service productivity measures. Specifically, ridership productivity was measured on the basis of riders per revenue bus-hour, riders per revenue bus-mile and riders per bus trip for weekday, Saturday and Sunday ridership. Overall, ridership for CAT is productive. Systemwide productivity measures are as follows:

Table 2-1
Existing System Ridership Productivity Measures

Weekdays	Weekday Riders per Bus-Hour	26.6
	Weekday Riders per Bus-Mile	2.5
	Weekday Riders per Bus Trip	18.1
Saturday	Saturday Riders per Bus-Hour	25.3
	Saturday Riders per Bus-Mile	2.3
	Saturday Riders per Bus Trip	16.4
Sunday	Sunday Riders per Bus-Hour	46.0
	Sunday Riders per Bus-Mile	4.0
	Sunday Riders per Bus Trip	24.3

Finally, system ridership from the weekday ridecheck survey has been summed by bus stop. As shown in Figure 2-3, the busiest bus stops are located along the West Main Street corriror, UVA campus and along US 29 leading up to the Fashion Square Mall.

Figure 2-3
Cumulative Weekday Ridership by Bus Stop



3.0 TDP SERVICE RECOMMENDATIONS

The Near-Term plan that is presented in this TDP reflects proposed service changes over the next three years, many of which can be implemented concurrent with the next scheduled service change in August. The Near-Term plan represents a cost-neutral approach in service hours; therefore recommendations are designed to maintain yet optimize the existing service structure with minimal route re-design. Improvements in on-time performance are prioritized while also addressing those services which are the least cost-effective. The pending relocation of Martha Jefferson Hospital is also a critical catalyst to this plan. With that in mind, any route re-structuring that occurs in the near-term plan remains cognizant of recommendations in the short-range plan to minimize customer impact. Recommendations for the Near-Term service plan (Years 1-3 of the TDP six-year time period) are:

FY 2012 Transit Service Improvements

- Renumber Route 2B to Route 2 and modify route to provide bi-directional service along the Albemarle County segments of the service;
- Renumber Route 1B to Route 1;
- Create new Route 10 by combining streamlined segments of Route 1A with northernmost segments of Route 10;
- Create new Route 12 by combining streamlined segments of Route 2A with the southernmost segments of Route 10;
- Decrease evening frequency on Route 21 from 30 minutes to 60 minutes to better match customer demand;
- Apply routing modifications to Evening Route 24 to match those recommended to Route 10 (i.e., service to the new Martha Jefferson Hospital campus).; and
- Modify Route 5 to provide bi-directional travel along Rio Road.

FY 2013 Transit Service Improvements

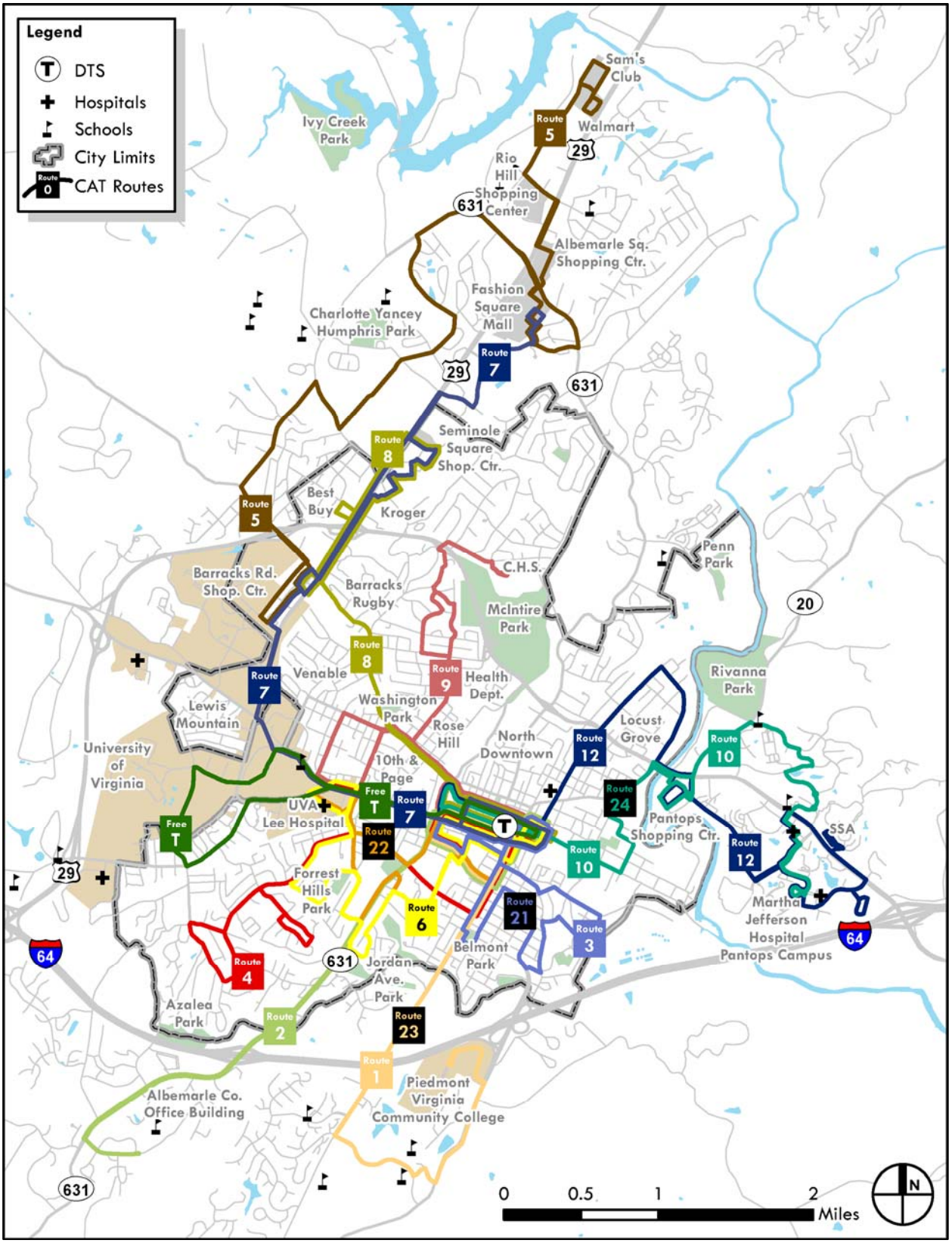
- Decrease evening and Saturday morning frequency on the Free Trolley from 15 minutes to 30 minutes to better match customer demand;
- Adjust Route 7's morning running times by adding one vehicle to improve on-time performance plus adjust inbound routing in downtown to mimic the Free Trolley;
- Change Route 1's approach to PVCC via Avon Street, Mill Creek Drive and VA 20;
- Modify Route 3 to assume productive stop segments along Monticello Avenue currently served by Route 1B;
- Streamline Route 4 to provide bi-directional corridor service along Cherry Avenue;
- Modify Route 6 to assume the Forrest Hills neighborhood currently served by Route 4, new service to Brookwood and bi-directional service throughout the core of the route;
- Modify Route 9's inbound routing to maintain bi-directional service along 10th Street; and
- Apply similar routing modifications to Evening Routes 21 and 23 to match those recommended to Routes 3 and 1, respectively.

FY 2014 Transit Service Improvements

- No service modifications are proposed for FY 2014.

A map depicting the Near-Term service plan is shown in Figure 3-1.

Figure 3-1
Near-Term (Years 1-3) Service Plan Map (Systemwide)



The Short-Range plan that is presented in this TDP reflects proposed service changes over Years 4 through 6 of the TDP's six-year time period. The plan represents a 14% increase in service-hours and includes service expansion both inside and outside of the Charlottesville city limits. Evening service offerings are also improved in the short-range plan. Recommendations for the Short-Range service plan are:

FY 2015 Transit Service Improvements

- Provide service to Hollymead with new Route 5B; and
- Extend Route 9 to serve the new McIntire Park YMCA.

FY 2016 Transit Service Improvements

- Improve midday frequency on Route 3 from 60 minutes to 30 minutes, Monday-Saturday;
- Provide new connectivity between South Charlottesville, UVA and Barracks Road Shopping Center via Route 4; and
- Simplify night service be eliminating special route nomenclature, instead offering night service on Routes 1, 3, 4, 6 and 10 in addition to existing Routes 5, 7 and the Free Trolley.

FY 2017 Transit Service Improvements

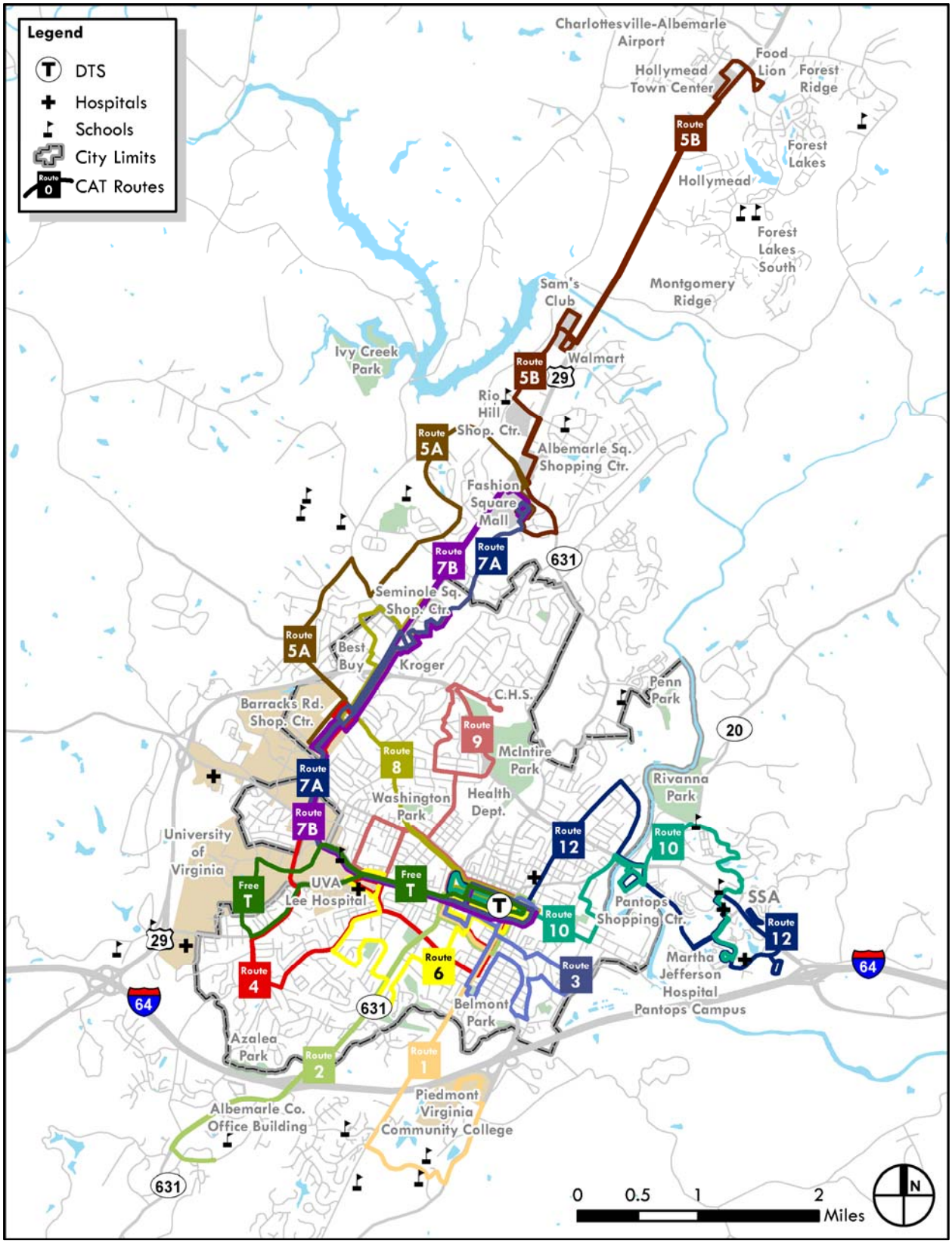
- Provide service to the new Hillsdale Drive extension by splitting the existing Route 7 into two branches – Route 7A and 7B; and
- Provide service to the new Albemarle Place development via Route 8.

A map depicting the Short-Range service plan is shown in Figure 3-2.

In addition to the service recommendations described above, it is also recommended that the City consider establishing a Transit Advisory Committee (such as the Project Advisory Committee that was formed for this TDP). Members of this committee should represent various geographic areas and interests of Charlottesville, and should include representation from UVA and Albemarle County (as financially vested stakeholders of CAT). The primary function of this committee is to serve as a liaison between the Charlottesville City Council and CAT staff. Other functions / responsibilities of this committee would need to be determined, but at minimum, could include the following:

- Review monthly service performance reports from CAT staff
- Work with CAT staff in addressing service requests and complaints
- Make recommendations to the City Council regarding transit-related policies and service changes
- Function as a sounding board and provide direction for updates of this TDP
- Serve as a resource for interjurisdictional transit coordination
- Participate in transit-related public forums

Figure 3-2
Short-Range (Years 4-6) Service Plan Map (Systemwide)



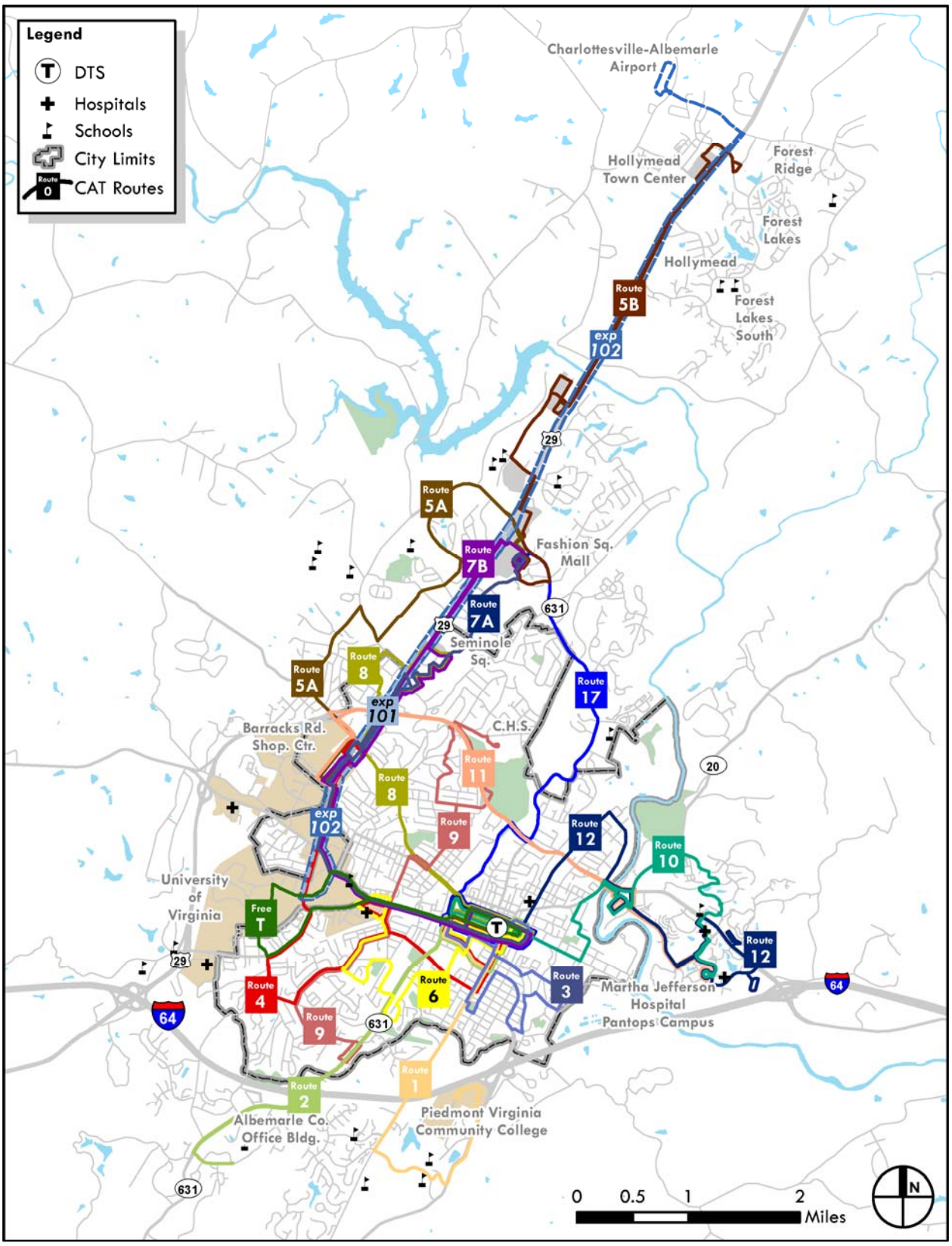
4.0 LONGER-TERM SERVICE RECOMMENDATIONS

In 2008, the Thomas Jefferson Planning District Commission (TJPDC) completed a Regional Transit Authority (RTA) Plan for the City of Charlottesville and Albemarle County. As part of this study, several service plan scenarios were developed, each with an incrementally greater level of investment required. The Long-Range service plan outlined in this TDP builds upon the Near-Term and Short-Range recommendations described in the two previous chapters and attempts to integrate the resulting service with the range of options presented in the RTA Plan. It is also important to note that CAT will be required to submit a revised Transit Development Plan spanning FY 2018-FY 2023 during the initial timeframe of this service plan. Thus, these recommendations will be revisited and refined in advance of FY 2018. Highlights of the Long-Range service plan are:

- Maintenance of service improvements implemented in the near-term and short-range service plans;
- New Meadow Creek service between Downtown Charlottesville and the Fashion Square Mall that operates at 30-minute frequencies all-day (Route 17);
- New crosstown services between Barracks Road Shopping Center and Martha Jefferson Hospital that operates at 30-minutes in the peak periods and 60-minutes in the midday period (Route 11);
- Reconfiguration of Route 9 into a crosstown route that operates from Charlottesville High School to Willoughby Square; and
- New limited-stop service along the US 29 corridor between UVA and Charlottesville-Albemarle Airport via two route patterns that provide 30-minute service frequencies from the Charlottesville-Albemarle Airport to Fashion Square Mall, and 15-minute service frequencies from Fashion Square Mall to UVA (Routes 101 and 102);
- A park-and-ride facility located along the north end of the US 29 corridor that is served by the new limited stop service; and
- Significant expansion of Sunday service, with new service on Routes 1, 3, 4, 5A, 5B, 6 and 10.

The Long-Range service plan reflects a 45 percent increase in annual revenue bus-hours over the existing CAT transit system. A map depicting the Long-Range service plan is shown in Figure 4-1.

Figure 4-1
Long-Range Service Plan Map (Systemwide)



5.0 TDP FINANCIAL REQUIREMENTS

Proposed improvements in the first three-years of the TDP (the Near-Term Plan) are essentially cost-neutral. Proposed improvements in the second three years of the TDP (the Short-Range Plan) are anticipated to add 14% to CAT's annual revenue bus-hours. The Long-Range Plan adds 45% to CAT's annual bus-hours. Table 5-1 presents estimates of annual revenue bus-hours and annual revenue bus-miles for each TDP service plan. Table 5-2 presents estimates of projected peak vehicle requirements by vehicle type.

Table 5-1
Projected Service Requirements

	Current	Near-Term (Yrs 1-3)	Short-Range (Yrs 4-6)	Long-Range (> 6 yrs)
Annual Rev. Bus-Hours	89,110	89,210	101,440	129,210
% Change from Current	n/a	0.1%	14%	45%
Annual Rev. Bus-Miles	939,900	954,300	1,051,400	1,383,100
% Change from Current	n/a	1.5%	12%	47%

Table 5-2
Projected Peak Vehicle Requirements

	Current	Near-Term	Short-Range	Long-Range
29' & 35' Buses				
Peak Requirement	19	19	21	29
Total Fleet	27	27	27	35
Replica Trolley Buses				
Peak Requirement	3	3	3	3
Total Fleet	5	5	5	4
Body-on-Chassis Buses				
Peak Requirement	3	3	3	3
Total Fleet	4	4	4	4
TOTAL PEAK REQUIREMENT	25	25	27	35
TOTAL FLEET	36	36	36	43

CAT presently owns a fleet of 36 buses which consist of 27 standard buses (two of which are hybrids), 5 trolley buses and 4 small "body-on-chassis" buses (used for evening service). CAT also owns eight non-revenue vehicles to support transit service. CAT programs bus purchases one year in advance in the CIP, for large bus purchases typically requires a grant request a year in advance of the year of expected delivery. Purchases for body-on-chassis and non-revenue vehicles are typically programmed in the CIP in the same year as expected delivery. Planned grant requests for the TDP six-year period are as follows:

FY 2012 – 5 units

- Funds to replace Bus #304 with Body-on-Chassis diesel (#308)
- Funds to replace Bus #830 and #831 with 35' diesel Replica Trolleys (#401 & #402). Delivery not expected until FY 2013
- Funds to replace Bus #842 and #844 with 29-foot hybrid buses (#210 & #211). Delivery not expected until FY 2013

FY 2013 – 5 units

- Funds to replace Bus #305 with Body-on-Chassis diesel (#309)
- Funds to replace Bus #840 & #841 with 29-foot hybrid buses (#212 & #213). Delivery not expected until FY 2014
- Funds to replace Bus #847 with 29-foot hybrid bus (#214). Delivery not expected until 2014
- Funds to replace Bus #848 with 35-foot diesel Replica Trolley (#403). Delivery not expected until FY 2014

FY 2014 – 2 units

- Funds to replace Bus #833 with 35-foot diesel Replica Trolley (#404). Delivery not expected until 2015
- Funds to replace Bus #849 with 29-foot hybrid bus (#215). Delivery not expected until FY 2015

FY 2015 – 2 units plus 3 non-revenue vehicles

- Funds to replace Bus #306 and #307 with Body-on-Chassis diesel (#310 & #311)
- Funds to replace 3 non-revenue vehicles

FY 2016 – 1 unit plus 3 non-revenue vehicles

- Funds to replace Bus #308 with Body-on-Chassis diesel (#312)
- Funds to replace 3 non-revenue vehicles

FY 2017 – 1 unit plus 2 non-revenue vehicles

- Funds to replace Bus #309 with Body-on-Chassis diesel (#313)
- Funds to replace 2 non-revenue vehicles

Table 5-3 presents a cash flow analysis of O&M costs and likely revenues for CAT for the TDP six-year period. Key assumptions in this table are as follows:

- Costs identified for FY 2012 reflect the CAT 2012 operating budget.
- Costs for new / modified transit services reflect costs associated with the service plans presented earlier in this document.
- An inflation factor of 3 percent/year has been assumed in the cost estimates.
- Funding levels from existing revenue sources are based on assumptions documented in the TDP, and reflect sources coming from Federal Transit Administration programs, the State of Virginia, the City of Charlottesville, Albemarle County, UVA, passenger fares, and miscellaneous sources.

Table 5-3
O&M Costs and Potential Revenue Sources
(Year of Expenditure Dollars)

OPERATIONS Service Costs/Funding Category	Budget FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
Projected Operating & Maintenance Costs						
Prior Year O&M Costs, Inflated	$6,018,412	$6,199,000	$6,386,200	$6,577,800	$7,078,900	$7,695,300
O&M Costs for Service Changes, Inflated	n/a	$1,200	$0	$294,900	$392,300	$266,900
Total O&M Costs	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
Change from Prior Year	$228,889	$181,788	$186,000	$486,500	$598,500	$491,000
Anticipated Non-City Funding Sources						
Federal Operating Assistance (5307)	$1,513,169	$1,558,600	$1,605,400	$1,653,600	$1,703,200	$1,754,300
State Operating Assistance	$825,612	$850,400	$875,900	$902,200	$929,300	$957,200
Albemarle County	$648,004	$674,100	$701,800	$731,700	$755,000	$784,000
Fare Revenues	$440,000	$445,000	$445,000	$464,600	$489,600	$506,600
Job Access Reverse Commute (JARC)	$335,611	$335,600	$335,600	$335,600	$335,600	$335,600
UVA - Fare-FREE ID Access	$145,000	$149,400	$153,900	$158,500	$163,300	$168,200
Advertising	$75,000	$77,300	$79,600	$82,000	$84,500	$87,000
UVA - Free Trolley Assistance	$60,000	$61,800	$63,700	$65,600	$67,600	$69,600
Rent	$52,908	$52,900	$52,900	$52,900	$52,900	$52,900
Total Non-City Funds	**$4,095,304**	**$4,205,100**	**$4,313,800**	**$4,446,700**	**$4,581,000**	**$4,715,400**
Percent Change from Prior Year		2.7%	2.6%	3.1%	3.0%	2.9%
City of Charlottesville Funding	**$1,923,108**	**$1,995,100**	**$2,072,400**	**$2,426,000**	**$2,890,200**	**$3,246,800**
Percent Change from Prior Year		3.7%	3.9%	17.1%	19.1%	12.3%
TOTAL REVENUE	**$6,018,412**	**$6,200,200**	**$6,386,200**	**$6,872,700**	**$7,471,200**	**$7,962,200**
		3.0%	3.0%	7.6%	8.7%	6.6%

Funding required from the City of Charlottesville is anticipated to increase from $1.923 million in FY 2012 to $3.253 million in FY 2017. Much of the increase begins in FY 2015, when significant service expansion is proposed. Although not included in the above table, it is important to note that longer-range service improvements that are beyond the TDP's six-year time period (described in Section 4.0 of this document) are estimated to have an annual O&M cost of $1.87 million in current year dollars.

Table 5-4 presents estimated capital costs and potential funding sources for CAT for the TDP six-year time period. In addition to the vehicle requirements described above, other capital costs include a Barracks Road Transit Station and an annual allotment for bus stop improvements. Capital / vehicle revenue sources assume 80% funding from federal programs (5307/5309), 16% funding from City funds and 4% from State funds (State funds typically vary from 4 to 16%. For purposes of this TDP, 4% has been assumed).

Table 5-4
Capital Expenditures and Potential Revenue Sources
(Year of Expenditure Dollars)

CAPITAL Capital Costs/Funding Category	Projected FY2012	Projected FY2013	Projected FY2014	Projected FY2015	Projected FY2016	Projected FY2017
EXPENDITURES						
Bus & Non-Revenue Vehicle Purchases	$2,405,000	$2,589,000	$1,218,000	$365,000	$254,000	$203,000
Bus Stop Improvements	$0	$57,900	$60,800	$63,800	$67,000	$70,400
Barracks Road Transit Station	$0	$0	$1,700,000	$0	$0	$0
Total Expenditures	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**
FUNDING						
Anticipated Funding Sources						
Federal Grants (80%)	$1,924,000	$2,117,520	$2,383,040	$343,040	$256,800	$218,720
Local Funds (16%)	$384,800	$423,504	$476,608	$68,608	$51,360	$43,744
State Capital Assistance (4%)	$96,200	$105,876	$119,152	$17,152	$12,840	$10,936
Total Funding	**$2,405,000**	**$2,646,900**	**$2,978,800**	**$428,800**	**$321,000**	**$273,400**

CAT

charlottesville area transit

May 16, 2011

To Whom It May Concern:

This message addresses the May 2011 (Proposed Final) Transit Development Plan: Fiscal Years 2012-2017 prepared by Connetics Transportation Goup (CTG) under contract to the Department of Rail and Public Transportation (DRPT).

The Charlottesville City Council voted to notify DRPT that it does not endorse the Transit Development Plan (TDP) recommendations to change two Charlottesville bus routes, Route 1A and Route 2A. Therefore, Charlottesville City Council will not act on the recommendation to create a new Route 12. Also, any adjustments to Route 10 and night Route 24 will require Albemarle County's agreement to fund any additional cost of service over and above the appropriated amount of funding approved by the Albemarle County Board of Supervisors on April 6, 2011.

This message is intended to prevent any misunderstanding of the position of the City of Charlottesville regarding the proposed final TDP prepared by CTG and is a temporary statement of the May 16, 2011 decision of the Charlottesville City Council pending an official notification of DRPT from the City of Charlottesville.

Provided by,

Bill Watterson

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Charlottesville Area Transit Manager

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